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ABSTRACT

This study examined gender issues in public education, focusing on the Edina Public Schools, Minnesota. Data gathered from district, state, national, and international sources included student enrollment, student participation in school or district programs, grades from school report cards, standardized test scores, and perceptions and attitudes from surveys on gender similarity and differences. Statewide and national data from the NAEP were also collected. Overall, gender differences in perspectives of environment and student behavior took hold during adolescence. Males and females had unique, equally painful problems. Three times as many boys as girls were in special education. Language arts and social studies were a more female province, while computer science, economics, and sciences were a male province. Girls were more engaged in school and classroom learning, worked harder, and received higher grades and more recognition than boys. Boys were much more likely to be suspended, had more incidents of ill-disciplined and risk taking behaviors, and were more impulsive. Few differences were found in developmental cognitive abilities in the verbal skills. Average academic achievement was similar for boys and girls. However, a disproportionate number of boys performed at the lowest-achieving level, and a disproportionate number of girls performed at or above the highest-achieving level. (Contains approximately 180 references.) (SM)

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Gender Differences and Student Learning

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In today's highly charged national focus on how to improve student learning achievement and school performance, understanding the differences between male and female students is an important element for increasing all students' successes. Over the past three decades, educators, researchers, and policy-makers have engaged in a debate about gender equity in education. Although progress has been made in achievement and participation in programs and services for girls and boys, understanding of gender differences and its relationship to student learning outcomes has not fully developed yet.

Researchers and educators in Edina Public Schools became aware of apparent differences in male and female student performance in school and sought to explore the gender issue and its implications for the theory and practice of teaching and learning. Hence, an objective was developed for the 2001-02 school year aimed at learning more about teaching and learning practice and probable gender impact. To this end, the Edina Public Schools formed a Gender Task Force Committee to conduct a study and examine gender differences at all age.

This study mainly focuses on collecting evidence of gender difference and its impact on student learning. In particular, the following research questions guided the analyses, considerations and implications. (1) Are there gender differences that have an influence on student development and learning? (2) Can we find hard evidence about gender differences in the classroom and the school? (3) What are the perceived and real learning differences or developmental differences between males and females? (4) Does the school enterprise include behaviors, expectations and systems that appear to impact student learning and growth? Can a relationship between these behaviors and expectations and an impact on gender differences be established? (5) Is student earning impacted by the specific behavior and actions of adults and other students during the schooling process? (6) How can we ensure that the education system customizes the instruction delivered in the classroom and school at large to best meet the needs of both boys and girls?

The study reviewed theories and findings on gender research and sought to better understanding a foundation of best practice in primary K-12 public and private school settings nationally. Next, this study collected evidence of gender similarities and differences in the Edina Public Schools. Finally, this study analyzed and synthesized the comprehensive data collected and established considerations and implications for classrooms and schools to regard as fundamental challenges in teaching and learning practice. Findings of this research were reported to the Edina School

Board of Education and reported in the local and state newspapers[1]. In addition, these findings drew much attention among Minnesota communities. Presenting this study in AERA, we hope others can be benefit from our insights and learn from our errors. In addition, we hope better understanding gender differences will help plan toward a more effective set-of-solutions for improving student performance.

Literature Review

Literature and research suggest that boys and girls, over time, may not fully benefit from our educational system and its instructional delivery. Also, boys and girls have different learning and developmental needs. In the 1970s, Gilligan, the Sadkers, and the American Association of University of Women began the gender research and found a great deal of bias against females in adult and child communities. During the two decades since 1970, the focus of work on gender published in the field of education was on girls. Researchers demonstrated that career expectations and subject choices were structured along traditional gender lines, to the disadvantage of female. The hidden curriculum contributed to the reinforcement of sex roles, and aspects of the formal curriculum reinforced masculine notions of subjects such as science and mathematics. This perspective was promoted in schools of education. Schools were urged to adopt equal opportunity policies in an attempt to confront these issues, new textbooks sought to avoid gender bias, and some steps, such as the Girls Into Science and Technology Project, were taken to make science more attractive to girls.

In the 1990s, British and Australian educators were ahead of American educators in confronting and specifically addressing the problem of male underachievement. Britain researchers found that girls were consistently outperforming boys in achievement across the range of subjects, particularly in English, the humanities and foreign languages over several years from the national high school graduation examinations (General Certificate of Secondary Education). Vigorous debate has taken place in Britain, searching for reasons for boys' lower levels of achievement, and exploring ways in which the gap can be narrowed. Research has been carried out at a number of levels to explain the failure of boys to achieve at the same level as girls, including teacher-student interaction, curriculum content, gender images of subjects, modes of assessment, single-sex schooling, labor market changes, and concepts of masculinity. Also, Australia educators focused on masculinity and followed up the "boys and relationships" theme, as is evidenced by increasing educational press coverage and demands for consultancy.

In the United States, data from the Condition of Education by the U.S. Department of Education (1995) and The American Teacher 1997: Examining Gender Issues in Public Schools by the Metropolitan Life Insurance Company (1997) started to show boys on average are a year and a half behind girls in reading and writing; they are less committed to school and less likely to go to college. In the same year, college fulltime enrollment was 45 percent male and 55 percent female. The U.S. Department of Education predicted that the ratio of boys' entry into college would continue to worse. Kipnis (1999) examined the lives of boys at risk and suggests that more boys than girls have troubles socially, academically, and emotionally in school. Summers (1999) cited numerous statistical numbers and claims that American girls are thriving in school and American boys are the "second sex." Furthermore, Gurian (2001) provided scientific evidences and documented many biological gender differences that influence learning and shows that educators must change the classroom strategy for gender differences.

As limitations of scope of research, these studies did not provide a comprehensive picture of gender differences with multiple facets, such as achievement, intellect, motivation, interest, social and emotional development, as well as school and classroom environment. Furthermore, those studies did not explain the causes of gender differences, nor provide appropriate recommendations to improve education policies and strategies that can develop educational systems that better serve all students.

The Edina Public Schools conducted this gender research to find and collect sufficient evidence to examine whether there are gender differences in learning and development in multiple facets such as achievement, intellect, psychology, behavior, social and emotion development, and school and classroom environment. In addition, this study intends to explore the reasons for the gender differences and develop teaching strategies and school-wide and district-wide reform strategies to address these differences in the classroom to meet different needs of boys and girls.

Methodology

In order to analyze the gender differences clearly and deeply, a Gender Task Force Research Committee was formed. Members of this group were represented by grade, school, administrator/teacher, and gender. This group met every month to monitor the progress of the gender research. In the beginning of the research, this group defined a comprehensive data set to

be gathered from the district, the state, national and international sources. Comprehensive data from K-12 grades were gathered and assembled from a variety of sources including enrollment, student participation in school or district programs, student grades from school report cards, standardized test scores, perceptions and attitudes from surveys on gender similarity and differences in the Edina Public Schools. Also, statewide data and national data (NAEP) were used to present a more comprehensive comparison. This group examined all data and formed plausible explanations, and in-depth analyses. Finally, this group provided instructional and curriculum recommendations that educators can use to enhance the success of all students.

In data collection and analysis, entire student population was used for data collection, including enrollment, participation, academic records, and survey data. Due to the lack of a uniform format and the manual entry nature of the elementary report card system, a stratified random-selected sample was used to collect the elementary report cards for analyzing grades by gender.

In order to examine patterns and draw valid findings from these data, all data were tracked back for four years when possible, and broken down by gender for analysis. Descriptive statistics were derived using the traditional statistical analyses. T-tests or F-tests were conducted to examine if the gender differences are statistically significant.

Results and Analyses

Student Enrollment and Participation

Four years' enrollment data were collected, summarized and examined by grade and gender. Student participation in school and district programs such as special education services, remedial or intervention programs, gifted education services program[2], were collected and analyzed. By conducting gender analyses in these programs, the study is intended to find whether these programs meet both male and female student needs.

Table 1 shows the differences in student enrollment in the Edina Public Schools by gender and by grade. The overall enrollment trend over the last four years shows the enrollment of males and females was approximately the same over the four years, although a few statistically significant differences were found in some grades and some schools.

Table 1
Student Enrollment Summary by Grade
1998-2002

	Female		Male		Total
Pre K	44	35%	83	▲ 65%	127
K	224	50%	227	50%	451
Grade 1	238	48%	258	52%	496
Grade 2	278	51%	262	49%	540
Grade 3	275	48%	296	52%	571
Grade 4	281	51%	269	49%	550
Grade 5	259	45%	312	55%	571
Grade 6	260	49%	270	51%	530
Grade 7	286	51%	270	49%	556
Grade 8	263	50%	263	50%	526
Grade 9	281	52%	257	48%	538
Grade 10	254	47%	283	▲ 53%	537
Grade 11	253	51%	247	49%	500
Grade 12	259	49%	274	51%	533
Total for 2001-02	**3455**	**49%**	**3571**	**51%**	**7026**
Total for 2000-01	**3560**	**49%**	**3729**	**51%**	**7289**
Total for 1999-00	**3580**	**49%**	**3677**	**51%**	**7257**
Total for 1998-99	**3574**	**49%**	**3708**	**51%**	**7282**

Note: ▲ = Gender difference statistically significant at .05 level.

Table 2 presents data by gender about students who are receiving special education services and students who were identified for taking medication at school for Attention Deficit Hyperactivity Disorder (ADHD). The results reveal considerable gender differences among students receiving special education services and ADHD. Across all grades, males were disproportionally represented.

Table 2
Students Who Were identified for the Special Education Services or for Taking Medication for Attention Deficit Hyperactivity (ADHD)
2001-2002

	Female		Male		
	Number	Percent	Number	Percent	Total
Students Who Were Identified for the Special Services					
K	13	28%	34	▲ 72%	47
1	15	28%	39	▲ 72%	54
2	15	23%	49	▲ 77%	64
3	18	21%	68	▲ 79%	86
4	15	22%	52	▲ 78%	67
5	19	30%	45	▲ 70%	64
6	14	22%	51	▲ 78%	65
7	18	25%	55	▲ 75%	73
8	15	25%	45	▲ 75%	60
9	12	19%	50	▲ 81%	62
10	15	25%	46	▲ 75%	61
11	11	21%	41	▲ 79%	52
12	19	26%	55	▲ 74%	74
Total	**199**	**24%**	**630**	▲ **76%**	**829**
Students Who Were Identified as ADHD					
Taking Medication at School	**29**	**32%**	**63**	▲ **68%**	**92**
Taking Medication at School or Home	113	27%	300	▲ 73%	413

Note: ▲ = Gender difference statistically significant at .05 level.

Tables 3 and 4 present data by gender for low-achieving students who received remedial and intervention services or participated in alternative programs. Students who scored below 40 on the national percentile ranks in the standardized tests or were recommended by classroom teachers were qualified for the Success Center Program. The data reveal a tendency for males to outnumber females among low-achieving students in most elementary grades and in all types of secondary school alternative programs.

Table 3
Elementary Student Enrollment for Success Center[3]
2001-2002

	Female		Male		Total
Grade	Number	Percent	Number	Percent	Number
1	12	31%	▲ 27	69%	39
2	30	46%	35	54%	65
3	36	44%	▲ 45	56%	81
4	▲ 39	56%	31	44%	70
5	14	40%	▲ 21	60%	35
Total	**131**	**45%**	▲ **159**	**55%**	**290**

Note: ▲ = Gender difference statistically significant at .05 level.

Table 4
Students Participated in Alternative Programs
1999-2001

	Female		**Male**		**Total**
	Number	**Percent**	**Number**	**Percent**	**Total**
1999-2000					
Alternative Program – District 287	19	35%	36	▲ 65%	55
Extended Yr. Summer School	5	18%	23	▲ 82%	28
Prairie Center Alternative – IS	15	▲ 63%	9	38%	24
Prairie Center Alternative	10	37%	17	▲ 63%	27
Sobriety High School	1	20%	4	▲ 80%	5
Overall	**50**	**36%**	**89**	▲ **64%**	**139**
2000-2001					
Alternative Program – District 287	34	42%	47	▲ 58%	81
Extended Yr. Summer School	14	41%	20	▲ 59%	34
Prairie Center Alternative – IS	10	45%	12	55%	22
Prairie Center Alternative	8	32%	17	▲ 68%	25
Sobriety High School	1	33%	2	67%	3
Overall	**67**	**41%**	**98**	▲ **59%**	**165**

Note: ▲ = Gender difference statistically significant at .05 level.

Table 5 provides a picture of gender analysis for extremely high-achieving students who received gifted education services program. There were few gender differences in participation in the gifted education services program in most grades. The overall gender difference in the gifted education services program was negligible.

Table 5
Gifted Education Services Program
2000-2001

	Female		Male		Total
Grade	Number	Percent	Number	Percent	Number
3	29	56%	23	44%	52
4	23	39%	▲ 36	61%	59
5	39	41%	▲ 57	59%	96
6	50	50%	50	50%	100
7	49	48%	54	52%	103
8	50	45%	60	55%	110
9	62	50%	61	50%	123
10	45	56%	36	44%	81
11	57	55%	47	45%	104
12	34	59%	24	41%	58
Total	**438**	**49%**	**448**	**51%**	**886**

Note: ▲ = Gender difference statistically significant at .05 level.

The analysis of the gender composition of enrollment and participation in the school and district educational programs showed that, in general, Edina students were gender balanced in general enrollment and gifted education services program. However, males were over-represented in special educational services, ADHD, remedial or intervention programs, and alternative programs.

Academic Performance and Achievement

Data, including course grades, class ranks, honor rolls, awards, national Merit Scholar recipients, standardized achievement test results, cognitive ability test results, student participation and test results in Advanced Placement programs (AP), were reported and analyzed. This analysis is intended to examine if both males and females have benefited and learned from the Edina Public Schools educational programs and if, in fact, males and females have different learning preferences.

Table 6 shows the number and percentage of students by gender in grades 6 through 12 who are in the top class ranks in 2000-01 and who are on the A Honor Roll. The results reveal significant gender differences in their course grades. Across the grades, females were disproportionally represented among high-achieving students.

Table 6
Class Rank and Honor Roll
Grades 6-12
2000-01

	Female		Male		
	Number	Percent	Number	Percent	Total
Top Class Rank					
Grade 6	118	▲ 74%	42	26%	160
Grade 7	83	▲ 70%	36	30%	119
Grade 8	52	▲ 66%	27	34%	79
Grade 9	24	▲ 60%	16	40%	40
Grade 10	70	▲ 67%	34	33%	104
Grade 11	72	▲ 64%	40	36%	112
Grade 12	56	56%	44	44%	100
Overall	**475**	▲ **67%**	**239**	**33%**	**714**
A Honor Roll					
Quarter 3					
10	142	▲ 63%	83	37%	225
11	109	▲ 58%	78	42%	187
12	126	▲ 72%	48	28%	174
Total	**377**	▲ **64%**	**209**	**36%**	**586**
Quarter 4					
10	143	▲ 63%	83	37%	226
11	109	▲ 58%	78	42%	187
12	129	▲ 73%	48	27%	177
Total	**381**	▲ **65%**	**209**	**35%**	**590**

Note: ▲ = Gender difference statistically significant at .05 level.

Table 7 shows that number of students who received school or district awards for academic performance or participation in activities. At the elementary school level, no significant difference was shown between boys and girls. At the secondary level, however, the number of females who received recognition and awards for their academic performance from the school, district and the nation was significantly higher than males.

Table 8 shows the number and percentage of students who were the National Merit Scholar recipients by gender over the last 12 years. The results reveal a slight tendency for females to outnumber males among Merit Scholar recipients over the last 12 years.

Table 7
School and District Awards and Participation
2000-01

		Female		Male		
	Type	**Number**	**Percent**	**Number**	**Percent**	**Total**
Elementary (K-5)		392	47%	438	53%	830
Middle Schools (Grades 6-9)	Awards	236	▲ 58%	169	42%	405
	Participants	126	▲ 57%	94	43%	2203
High School (Grades 10-12)	Awards	293	▲ 62%	176	38%	469
	Participants	41	▲ 73%	15	27%	56
Overall	**Overall**	**1088**	**▲ 55%**	**892**	**45%**	**1980**

Note: ▲ = Gender difference statistically significant at .05 level.

Table 8
Edina High School National Merit Scholar Recipients
1990-2002

Year	**Female**		**Male**		**Total**
	Number	**Percent**	**Number**	**Percent**	
2001-02	25	▲ 76%	8	24%	33
2000-01	16	48%	17	52%	33
1999-00	19	▲ 58%	14	42%	33
1998-99	25	▲ 60%	17	40%	42
1997-98	21	54%	18	46%	39
1996-97	19	▲ 63%	11	37%	30
1995-96	22	50%	22	50%	44
1994-95	21	▲ 68%	10	32%	31
1993-94	20	48%	22	52%	42
1992-93	14	45%	17	55%	31
1991-92	22	50%	22	50%	44
1990-91	19	45%	23	55%	42
Overall	**243**	**▲ 55%**	**201**	**45%**	**444**

Note: ▲ = Gender difference statistically significant at .05 level.

Table 9 summarizes the reading test results from five standardized tests over three years. The results suggest the tendency for females to outperform males in reading, although the results in some grades or for some years don't show any significant difference. See notes for the names of the standardized tests and the grade levels involved.

Table 9
Reading Test Scores from Standardized Tests
1999-2001

		ALT			MCA (Gr. 3 & 5) and BST (Gr. 8)		
		Female	Male	Difference	Female	Male	Difference
Year	Grade	Mean	Mean	Absolute Value	Mean	Mean	Absolute Value
2001	2	▲ 195	191	5			
	3	206	205	1	▲ 1521	1486	34
	4	215	215	5			
	5	222	223	5	▲ 1561	1528	33
	6	▲ 229	227	2			
	7	233	231	2			
	8	▲ 237	235	2	91	91	0
	10	▲ 21	19	2			
	12	25	25	0			
2000	3	▲ 208	206	2	▲ 1558	1481	77
	4	217	217	0			
	5	223	222	1	▲ 1627	1528	99
	6	228	227	1			
	7	233	232	1			
	8	236	235	1	90	90	0
	10	▲ 21	19	2			
	12	25	24	1			
1999	3	207	206	1	▲ 1413	1505	91
	4	▲ 215	213	2			
	5	221	220	1	▲ 1478	1386	93
	6	225	226	1			
	7	230	229	1			
	8				89	88	1
	10	20	19	1			
	12	25	25	0			

Notes:

1. ▲= Gender difference statistically significant at .05 level. 2. ALT[4] represents the Achievement Level Tests for Grades 2 –8. 3. MCA[5] represents the Minnesota Comprehensive Assessments at Grades 3 and 5. 4. BST[6] represents the Minnesota Basic Standards Tests at Grade8. 5. Numbers on Grade 10 are results of PLAN[7]. 6. Numbers on Grade 12 are results of ACT[8].

Table 10 summarizes the math test results from five standardized tests over three years. Results by gender suggest that in some grades, males and females had approximately the same average math achievement. The statistically significant differences at some grades or some years were observed to favor males.

Table 10
Math Test Scores from Standardized Tests
1999-2001

		ALT			MCA (Gr. 3 & 5) and BST (Gr. 8)		
		Female	Male	Difference	Female	Male	Difference
Year	Grade	Mean	Mean	Absolute Value	Mean	Mean	Absolute Value
2001	2	190	192	2			
	3	208	209	1	1527	1514	13
	4	218	219	1			
	5	228	▲ 231	3	1534	1540	6
	6	237	238	1			
	7	244	245	1			
	8	251	251	0	87	▲ 88	1
	10	22	22	0			
	12	24	▲ 25	2			
2000	3	211	212	1	1574	1538	36
	4	219	220	1			
	5	228	229	1	▲ 1554	1476	78
	6	239	240	1			
	7	245	▲ 247	2			
	8	253	252	1	87	87	0
	10	22	22	0			
	12	24	▲ 26				
1999	3	208	▲ 212	4			
	4	217	219	2	1484	▲ 1561	77
	5	228	▲ 230	2			
	6	236	▲ 240	4	1452	1569	17
	7	244	244	0			
	8	244	244	0	87	▲ 89	2
	10	21	22	1			
	12	23	▲ 25				

Notes:
1. ▲= Gender difference statistically significant at .05 level. 2. ALT represents the Achievement Level Tests (Grades 2 –8). 3. MCA represents the Minnesota Comprehensive Assessments (Grades 3 and 5). 4. BST represents the Minnesota Basic Standards Tests (Grade 8). 5. Numbers on Grade 10 are results of PLAN. 6. Numbers on Grade 12 are results of ACT.

Table 11 summarizes the writing test results from the Minnesota Comprehensive Assessments at Grades 5 and 10. All of the writing performance assessments show females significantly outperform males. Table 12 shows there were few differences in cognitive abilities between females and males in verbal and nonverbal areas. Statistically significant differences were observed in quantitative ability favored males over females in grades 4 and 7.

Table 11
Writing Test Scores from the Standardized Tests
1999-2001

		MCA (Gr. 5), BST (Gr. 10), and ACT (Gr. 12)		
		Female	Male	Difference
Year	Grade	Mean	Mean	Absolute Value
2001	5	▲ 1598	1454	143
	10	▲ 3.49	3.22	.27
2000	5	▲ 1623	1463	160
	10	▲ 3.53	3.25	.29
1999	5	▲ 1617	1548	69
	10			

Note: ▲ = Gender difference statistically significant at .05 level.

Table 12
Test Results from the Cognitive Ability Tests, 1999-2001

	# Student		Verbal			Quantitative			Non-Verbal		
Year and Grade	F	M	F	M	Diff	F	M	Diff	F	M	Diff
Grade 2											
1999	224	276	206	204	-1.7	190	192	1.2	212	207	-4.7
2000	224	231	204	200	-3.7	189	188	-0.6	208	203	-4.9
2001	270	289	203	200	-3.2	192	191	-0.3	213	208	-4.4
Grade 4											
	# Student		Verbal			Quantitative			Non-Verbal		
Year and Grade	F	M	F	M	Diff	F	M	Diff	F	M	Diff
1999	268	277	228	228	-0.1	229	232	3.1	229	229	0
2000	262	264	228	230	2	232	▲ 237	4.2	228	232	3.8
2001	245	298	232	229	-2.6	231	▲ 238	6.8	230	231	0.5
Grade 7											
	# Student		Verbal			Quantitative			Non-Verbal		
Year and Grade	F	M	F	M	Diff	F	M	Diff	F	M	Diff
1999	245	274	255	252	1.2	255	256	1.4	252	250	-2.2
2000	261	256	254	254	0.1	252	▲ 258	6.5	251	252	0.5
2001	259	257	255	254	-1	255	▲ 258	3.6	254	251	-2.6

Note: ▲ = Gender difference statistically significant at .05 level.

Table 13 shows numbers and percentages of students who enrolled in Advanced Placement Programs[9] (AP) as well as basic and resource courses. The results reveal the pattern of males and females that attended high-academic AP courses and low academic resource or basic courses. It is interesting to note that the pattern for gender differences is by subjects. As shown in Table 13, females exhibited significantly higher enrollments in social studies and language AP courses, while males exhibited significantly higher enrollments in mathematics, science, computer and economics AP courses. Also, the results show that significantly more males selected and attended basic or resources courses.

Table 13
Enrollment in Advanced Placement Courses and Basic and Resources Courses
2000-01

	Female		Male		
	Number	Percent	Number	Percent	Total
AP and Enrichment Courses					
AP US History	107	▲ 57%	82	43%	189
AP French V	24	▲ 67%	12	33%	36
AP Latin V	2	▲ 100%	0	0%	2
AP Spanish V	62	▲ 72%	24	28%	86
AP Lit – 12	82	▲ 80%	20	20%	102
AP Statistics	15	47%	17	53%	32
AP Calc AB	19	37%	33	▲ 63%	52
AP Calc BC	36	44%	45	▲ 56%	81
AP Chemistry	4	33%	8	▲ 67%	12
AP Computer Science	15	19%	65	▲ 81%	80
AP Economics	37	36%	67	▲ 64%	104
AP Euro History	13	45%	16	55%	29
AP Government	50	▲ 57%	38	43%	88
AP German V	4	50%	4	50%	8
AP French IV	19	51%	18	49%	37
AP Psychology	51	54%	44	46%	95
AP Total	**540**	▲ **52%**	**493**	**48%**	**1033**
Basic or Resource Courses					
Resource Center	32	33%	66	▲ 67%	98
Study Hall	75	42%	105	▲ 58%	180
Composition Basic	11	23%	36	▲ 77%	47
Total	**118**	**36%**	**207**	▲ **64%**	**325**

Note: **▲ = Gender difference statistically significant at .05 level.**

Table 14 shows the number of students who participated in AP tests by gender. The results reveal that more females participated in AP tests and proportionally received a score of 3 or above in grades 9 through 11. At grade 12, more males received a score of 3 or above.

Table 14
Advanced Placement Tests Results by Grade
2000-01

	Number of Students for AP Test		Total Tests Students Attended		Number of Tests with Scores >= 3	
Grade	F	M	F	M	F	M
9	2	1	2	1	2	1
10	63	42	80	52	47	38
11	112	95	252	200	203	174
12	114	95	461	484	314	386
Total	291	233	795	737	566	599

Table 15 show percentages of females and males who received AP scores of 3 or above on the tests for English Literature, English Language, US History, Calculus and Biology. The results reveal that significantly more females received scores of 3 or above on language or history AP tests and a similar percentage of females and males received a score of 3 or above on Calculus and Biology.

Table 15
Advanced Placement Tests Results by Subjects
Percent of Students Who received A score of 3 or above
2000-01

	Female		Male		Total
Subject	Number	Percent	Number	Percent	
AP English Literature	72	▲ 60%	49	40%	121
AP English Language and Composition	88	▲ 62%	53	38%	141
AP US History	119	▲ 54%	103	46%	222
AP Calculus AB	11	48%	12	52%	23
AP Biology	66	49%	68	51%	134

Note: ▲ = Gender difference statistically significant at .05 level.

Table 16 presents all grade 10 student PLAN test results over the last four years. As shown in this table, females outperformed males in English and reading, while there were few differences between males and females in mathematics and science achievement. Table 17 presents data for grade 12 students who took ACT for college purposes over the last four years. In these results, based on a volunteer sample, females had the advantage in English, while males outperformed females in both mathematics and science.

Table 16
Edina Grade 10 PLAN Test Results
1997-2000

	# Student		English			Math			Reading			Science		
Year	F	M	F	M	Diff.	F	M	Diff.	F	M	Diff.	F	M	Diff.
2000	222	223	↑21.2	19.0	2.2	21.9	21.8	0.1	↑20.8	18.5	2.3	20.7	20.0	0.7
1999	252	252	↑21.5	19.5	2.0	21.8	21.9	0.1	↑21.1	19.4	1.7	20.6	20.5	0.1
1998	237	255	↑21.3	19.5	1.8	21.0	21.9	0.9	↑19.9	18.8	1.1	20.8	20.4	0.4
1997	234	202	↑20.6	18.7	1.9	21.2	21.2	0.0	↑19.4	18	1.4	20.3	20.1	0.2

Note: ↑ = Gender difference statistically significant at .05 level.

Table 17
Edina Grade 12 ACT Test Results
1998-2001

	# Student		English			Math			Reading			Science		
Year	F	M	F	M	Diff.	F	M	Diff.	F	M	Diff.	F	M	Diff.
2001	209	189	↑24.8	23.3	1.5	23.7	↑25.2	1.5	25.0	24.8	0.2	23.4	↑24.4	1.0
2000	216	157	↑24.5	23.5	1.0	24.2	↑25.8	1.6	25.3	24.4	0.9	23.8	↑25.1	1.3
1999	197	158	↑25.0	24.0	1.0	23.3	↑25.5	2.2	25.4	25.3	0.1	23.5	↑25.0	1.5
1998	184	154	↑24.6	23.7	0.9	24.1	↑25.7	1.6	24.8	24.5	0.3	23.7	↑25.0	1.3

Note: ↑= Gender difference statistically significant at .05 level.

Tables 18 and 19 present PSAT[10] and SAT[11] results. Generally, only high-achieving students are likely to take these tests for National Merit Scholar recognition or college specific requirements. Results show that males outperformed females in mathematics and females outperformed males in writing over the four years in PSAT tests at grade 11. At grade 12, high-achieving males were more likely to outperform females in both verbal and mathematics on SAT tests.

Table 18
Edina Grade 11 PSAT Test Results
1998-2001

	# Student		Verbal			Math			Writing		
Year	F	M	F	M	Diff.	F	M	Diff.	F	M	Diff.
2001	172	119	56.2	56.6	0.4	55.7	▲59.2	3.5	▲55.9	53.3	2.6
2000	150	143	54.0	▲55.7	1.7	55.8	▲59.4	3.6	▲55.8	53.4	2.4
1999	172	118	53.4	54.5	1.1	55.3	▲58.1	2.8	▲54.2	52.6	1.6
1998	158	127	55.7	54.5	1.2	54.4	▲56.9	2.5	▲57.4	55.4	2.0

Note: ▲ = Gender difference statistically significant at .05 level.

Table 19
Edina Grade 12 SAT Test Results
1998-2001

	# Student		Verbal			Math		
Year	F	M	Female	Male	Diff.	Female	Male	Diff.
2001	140	138	569	▲ 576	7	581	▲ 613	32
2000	175	131	573	569	4	574	▲ 596	22
1999	167	121	579	▲ 594	15	573	▲ 619	46
1998	133	134	590	▲ 573	17	582	▲ 620	38

Note: ▲ = Gender difference statistically significant at .05 level.

Table 20 presents student grades from school year 2000-2001 Edina elementary report cards. Grades in Reading, Listening and Speaking, Writing, and Mathematics were reported. In each subject, small content categories were averaged and totaled. For example, there are three categories under reading: Demonstrates comprehension, Reads independently, and Applies skills. After totaling small content categories, the scale for reporting results ranges from a low of 3 to a high of 12.

As the tables show, in general, few significant gender differences exist between male and females in student grades in Reading, Writing, and Mathematics as well as in work habits at the elementary school level. Girls at grades 1-5 received significantly higher grades than boys in areas, Listening and Speaking.

Table 20
Edina Elementary Student Grades
2000-01

	Number of Students		Reading			Listening/Speaking			Writing			Math		
	M	F	M	F	Diff.	M	F	Diff.	M	F	Diff.	M	F	Diff.
Grade 1	37	34	7.90	7.72	0.18	7.99	8.06	0.07	7.51	7.85	0.34	8.15	7.60	0.55
Grade 2	38	30	8.17	8.52	0.35	8.18	8.67	0.49	7.76	8.32	0.56	8.50	8.22	0.28
Grade 3	38	35	9.00	8.64	0.36	8.54	9.01	0.47	13.01	8.68	4.33	8.39	8.50	0.11
Grade 4	36	32	8.31	8.44	0.13	8.18	8.77	0.59	7.93	8.56	0.63	8.48	8.23	0.25
Grade 5	53	41	8.17	8.41	0.24	7.98	8.43	0.45	7.86	8.02	0.16	8.13	7.68	0.45
Overall	202	172	8.31	8.35	0.04	8.18	8.59	▲0.4	8.78	8.28	0.50	8.32	8.02	0.30

Note: ▲ = Gender difference statistically significant at .05 level.

The results presented in this section suggest that few significant gender differences existed in student grades in reading, writing and mathematics at the elementary school level. There did appear to be differences noted in areas of Listening and Speaking where boys were scored lower than girls. At the secondary level, females tend to perform better and receive more recognition in classroom-based indicators than males. In standardized tests, females tend to perform higher than males in reading and writing tests, while males tend to perform higher than females in mathematics. The Cognitive Ability Tests results, however, suggest little gender difference in verbal and nonverbal abilities at grades 2, 4 and 7, with a number of significant differences favoring boys in grades 4 and 7 in quantitative abilities.

Males and females show different tendencies in selecting AP and other courses at the high school. More males selected to attend mathematics, science, computer and economics AP courses, while more females selected to attend language and social studies AP courses. More females took AP tests at Grades 10 and 11 and received scores of 3 or higher on the 1-5 point scale. More males took AP tests at Grade 12 and received scores of 3 or higher. More males were enrolled in remedial and intervention subjects and more males took part in alternative learning classes.

Analysis also shows that different distributions in academic achievement exist from males to females. More males achieved at the bottom quartile and more females, in general, achieved at or above the top quartile. Although the number of male high-achievers was not as high as that of females, the average achievement of the male high-achievers, specifically in grades 11 and 12 in mathematics, was significantly higher than that of the female high-achievers.

Student Perceptions and Opinions

Data were collected from a variety of student opinion surveys: Minnesota Student Survey[12] in 1995, 1998 and 2001, the Edina Public Schools Student Opinion Survey[14] in 2001, the Developmental Assets Survey[13] in 1999 as well as the Edina Five Years After High School Survey. Analysis in this section examines if both genders benefited from their school learning environment and acquired developmental assets and behaviors.

Table 21 gathers information about student perceptions of their grades at school from the Search Institute Survey in 1999 and the Minnesota Student Health Survey in 1995, 1998, and 2001, respectively. The Minnesota Student Survey investigates students in grades 6, 9 and 12, while the Developmental Assets Survey investigates students in grades 6 through 12. Data presented here used results from the Developmental Assets Surveys in grades 6, 9, and 12 to keep a consistent and valid comparison with the results from the Minnesota Student Survey. In both survey instruments, students were asked if they most often received grades of A, A and B, B and C, C and D. As shown in Table 21, significantly more females reported that they most often received A or A and B than males in grades 6, 9 and 12 over the four years.

Table 21
Students Who Report That They Most Often Received Grades of A or A and B

	Grade 6			Grade 9			Grade 12		
	Female	Male	Difference	Female	Male	Difference	Female	Male	Difference
N=	220	211		184	178		140	120	
1995	▲ 95%	74%	21%	▲ 91%	75%	16%	74%	72%	2%
1998	▲ 87%	77%	10%	69%	62%	7%	▲ 85%	65%	20%
1999	▲ 91%	78%	13%	84%	81%	3%	▲ 93%	81%	12%
2001	▲ 84%	73%	11%	▲ 80%	60%	20%	▲ 74%	61%	13%

Note: ▲ = Gender difference statistically significant at .05 level.
Sources:
1. Developmental Assets: A Profile of Your Youth, Edina Public Schools. The Search Institute Survey 1999.
2. The Minnesota Student Health Survey, Edina Public Schools results, 1995, 1998 and 2001.

Since homework assignments can reinforce in-class learning and provide students with additional learning activities, the amount of time students devote to their homework is thought to have a major impact on what is learned. For example, research in learning mathematics has shown that

students who spend more time on homework are more likely to develop mathematics ideas, and perform at higher levels on tests that measure mathematical concepts.

Tables 22 and 23 summarize information about the amount of time males and females reported doing their homework. Table 22 reports results from the Edina Student Opinion Survey in 2001. Table 23 reports results from the Search Institute Survey in 1999 and from the Minnesota Student Health Survey in 1995, 1998 and 2001, respectively. On average, females and males in grades 1 through 7 spent similar amounts of time doing homework. In grades 8 through 12, significantly more females reported spending at least one hour doing homework daily than males.

Parallel to the results shown in Table 22, results in Table 23 show that females in grade 9 and 12 outnumbered males in spending three hours doing homework daily across four years. The exception was grade 6 where there was less gender differences regarding homework time. Table 24 presents percentages of grades 6, 9 and 12 students who reported they like school. Generally, more females than males reported that they like school.

Table 22
Students Who Report They Spend Time Doing Homework Daily
2000-01

	Female		Male		
	N	Percent	N	Percent	Difference
Grade 1	222	64%	201	64%	0%
Grade 2	244	63%	260	67%	4%
Grade 3	253	59%	248	56%	4%
Grade 4	196	78%	241	73%	5%
Grade 5	223	87%	222	78%	9%
Grade 6	275	80%	218	71%	9%
Grade 7	228	78%	218	70%	8%
Grade 8	252	▲ 84%	233	68%	16%
Grade 9	186	▲ 90%	224	73%	17%
Grade 10	203	▲ 85%	181	73%	12%
Grade 11	218	▲ 92%	200	65%	27%
Grade 12	162	▲ 81%	167	48%	33%
Average		▲ **78%**		**67%**	**11%**

Notes:
1. ▲ = Gender difference statistically significant at .05 level.
2. The survey asked students whether they spend 0 hour, half hour, 1 hour, or 2 hours or more doing homework daily. The results combined students' responses. At the elementary level, data were from all students who reported spending a half-hour or more. At the secondary level, data were from all students who reported spending at least one hour doing homework daily.
3. Sources: Edina Public Schools Student Opinion Survey, 2001.

Table 23
Students Who Report They Spend At Least Three Hours Doing Homework Weekly

	Grade 6			Grade 9			Grade 12		
	Female	Male	Difference	Female	Male	Difference	Female	Male	Difference
N=	220	211		184	178		140	120	
1995	71%	69%	6%	▲ 87%	68%	19%	▲ 67%	48%	192%
1998	76%	70%	6%	▲ 87%	69%	18%	▲ 77%	58%	19%
1999	▲ 75%	57%	18%	▲ 89%	74%	3%	▲ 79%	54%	25%
2001	72%	66%	6%	▲ 89%	68%	21%	▲ 66%	34%	32%

Note: ▲ = Gender difference statistically significant at .05 level.
Sources:
1. Developmental Assets: A Profile of Your Youth, Edina Public Schools. The Search Institute Survey 1999.
2. The Minnesota Student Health Survey, Edina Public Schools Results, 1995, 1998 and 2001.

Table 24
Students Who Report They Like School

	Grade 6			Grade 9			Grade 12		
	Female	Male	Differenc	Female	Male	Differenc	Female	Male	Differenc
N=	220	211		184	178		140	120	
1995	▲ 95%	74%	21%	▲ 91%	75%	16%	74%	72%	2%
1998	▲ 92%	80%	12%	85%	85%	0%	▲ 92%	82%	10%
2001	▲ 90%	80%	10%	▲ 86%	48%	38%	▲ 77%	64%	13%

Note: ▲ = Gender difference statistically significant at .05 level.
Source: Minnesota Student Health Survey, 1995, 1998 and 2001.

Table 25 presents the results from the Edina Student Opinion Survey in 2001 about the percentage of students at grades 1 through 5 who reported they were encouraged at school. The results show that there were few differences in reporting encouragement at school in most of grades. A few significant differences that favored females over males were observed.

Table 26 presents the results from the Developmental Asset Survey in 1999 about the percentage of students at grades 6 through 12 who reported they are encouraged at school. Results on this table show more statistically significant differences comparable to the results in Table 25. All of the statistically significant differences favored females. More females at the secondary level reported they were encouraged at school.

Table 25
Students Who Report They Are Encouraged at School
Grades 1-5, 2001

	Female		Male		
	N	Percent	N	Percent	Difference
Grade 1	225	94%	203	92%	2%
Grade 2	244	▲ 98%	264	82%	16%
Grade 3	263	99%	251	96%	3%
Grade 4	198	100%	247	96%	4%
Grade 5	227	▲ 98%	294	78%	20%
Average		▲ **98%**		**89%**	**9%**

Note: ▲ = Gender difference statistically significant at .05 level.
Source: Edina Public Schools Student Opinion Survey, 2001.

Table 26
Students Who Report They Are Encouraged at School
Grades 6-12, 1999

	Female		**Male**		
	N	**Percent**	**N**	**Percent**	**Difference**
Grade 6	240	▲ 71%	240	54%	17%
Grade 7	252	58%	230	51%	7%
Grade 8	258	▲ 46%	228	36%	10%
Grade 9	221	▲ 48%	221	34%	14%
Grade 10	263	42%	234	33%	9%
Grade 11	224	45%	191	45%	0%
Grade 12	204	▲ 54%	153	42%	12%
Average		▲ **52%**		**42%**	**10%**

Note: ▲ = Gender difference statistically significant at .05 level.
Sources: Developmental Assets: A Profile of Your Youth, Edina Public Schools. The Search Institute Survey, 1999.

Tables 27 and 28 report survey results from students who indicated that if they spend at least one hour doing the following activities each week:

1. practicing or taking lessons in music, art, drama, or dance, after school or on weekends,
2. going to programs, groups, or services at a church, synagogue, mosque, or other religious or spiritual places;
3. helping other people without getting paid such as helping out at a hospital, daycare center, food shelf, youth program, community service agency, or doing volunteer work
4. reading just for fun (not part of schoolwork).
5. playing computers or video games.

The original survey questions asked if students spend 0, 1, 2, 3-5, 6-10, or 11 hours or more on the activities mentioned above. In the tables, student responses were combined from "1 hour" to "11 hours or more" and reported as "spent at least one hour." Results from both tables reveal that significantly more females, specifically females in grades 9 and 12, spend their time on participating in lessons or activities in music, art, drama or dance activities, church activities, or reading for fun. Although a few gender differences between grade 6 males and females were found regarding time spent on music, art, or church activities, generally gender differences were small or negligible for grade 6 students over the years studied.

The 2001 Minnesota Student Survey added a question that investigated the time students spent on computer games or video games. The results of this survey show that significantly more males reported that they spend at least one hour playing computer or video games than females on a weekly basis. Table 28 confirms the results in Table 27 that significantly more females reported they spend at least one hour on reading for pleasure.

Table 27
Students Who Report They Spend At Least One Hour Doing the Following Activities Weekly

	Gr. 6			Gr. 9			Gr. 12		
	Female	**Male**	**Diff**	**Female**	**Male**	**Diff**	**Female**	**Male**	**Diff**
1995									
Music or art activities	▲ 69%	54%	15%	▲ 69%	36%	33%	▲ 45%	32%	13%
Church or other spirit activities	69%	68%	1%	▲ 81%	69%	12%	60%	55%	5%
Volunteer Work	29%	23%	6%	▲ 43%	24%	19%	▲ 53%	43%	10%
Reading for fun	88%	75%	13%	▲ 73%	57%	16%	73%	72%	1%
1998									
Music or art activities	▲ 78%	62%	12%	▲ 72%	57%	15%	▲ 49%	34%	15%
Church or other spirit activities	71%	67%	4%	77%	71%	6%	69%	64%	5%
Volunteer Work	22%	18%	4%	▲ 42%	31%	11%	▲ 58%	39%	19%
Reading for fun	80%	74%	6%	62%	53%	9%	71%	66%	5%
2001									
Music or art activities	▲ 84%	65%	19%	▲ 69%	49%	20%	▲ 39%	31%	8%
Church or other spirit activities	▲ 82%	68%	14%	▲ 78%	60%	18%	▲ 73%	53%	20%
Volunteer Work	28%	32%	4%	▲ 51%	35%	16%	▲ 48%	32%	16%
Reading for fun	81%	78%	3%	▲ 63%	50%	13%	58%	50%	8%
Playing computer or video games	73%	▲ 89%	16%	60%	▲ 85%	25%	▲ 50%	78%	28%

Note: ▲ = Gender difference statistically significant at .05 level.
Sources: Minnesota Student Survey, Edina Public Schools Results, 1995, 1998, and 2001.

Table 28
Students Who Report They Read At Least One Hour for Pleasure Weekly
Grades 6-12

	Female		Male		
	N	Percent	N	Percent	Difference
Grade 6	240	93%	240	88%	5%
Grade 7	252	▲ 84%	230	74%	10%
Grade 8	258	▲ 80%	228	70%	10%
Grade 9	221	▲ 79%	221	58%	21%
Grade 10	263	▲ 74%	234	60%	14%
Grade 11	224	65%	191	60%	5%
Grade 12	204	▲ 78%	153	63%	15%
Average		▲ **79%**		**68%**	**11%**

Note: ▲ = Gender difference statistically significant at .05 level.
Source: Developmental Assets: A Profile of Your Youth, Edina Public Schools. The Search Institute Survey, 1999.

There is growing concern in the United States about the increase in negative and potentially life-threatening behaviors among our young people coupled with a decrease in positive, health-promoting behaviors. In this report, information about Edina student involvement in risk-taking (e.g., violence, chemical use, etc.) behaviors were presented and analyzed by gender. This analysis is intended to examine what percentage of Edina males and females are reporting risk-taking behaviors and what gender differences exist in general and across grade levels.

Table 29 shows the percentage of males and females that reported that they were hurt by violence or experienced an unfriendly environment. Table 29 reveals that significantly more males at grades 6, 9 and 12 reported that they were victims of violence at grades 6, 9 and 12 during the last 12 months.

Table 29
Students Who Report They Have Been Hurt During the Last 12 Months
Grades 6, 9, 12

	Grade 6			Grade 9			Grade 12		
	Femal	Male	Diff	Femal	Male	Diff	Femal	Male	Diff
1995									
Been insulted	68%	▲ 82%	14%	65%	71%	6%	51%	▲ 64%	29%
Been threatened	17%	▲ 40%	23%	7%	▲ 34%	27%	6%	▲ 18%	12%
Been pushed, shoved, or grabbed	40%	▲ 73%	33%	21%	▲ 53%	32%	10%	▲ 23%	13%
Been kicked, bitten or hit	17%	▲ 49%	32%	10%	▲ 32%	22%	2%	▲ 12%	10%
1998									
Been insulted	62%	▲ 78%	16%	58%	▲ 78%	20%	26%	▲ 56%	30%
Been threatened	8%	▲ 35%	27%	10%	▲ 28%	18%	4%	▲ 23%	19%
Been pushed, shoved, or grabbed	32%	▲ 62%	30%	26%	▲ 61%	35%	8%	▲ 29%	21%
Been kicked, bitten or hit	19%	▲ 42%	23%	15%	▲ 36%	21%	5%	▲ 16%	11%
2001									
Been insulted	61%	▲ 79%	18%	53%	▲ 81%	285	365	▲ 63%	27%
Been threatened	13%	▲ 35%	22%	6%	▲ 40%	34%	3%	▲ 30%	27%
Been pushed, shoved, or grabbed	42%	▲ 66%	24%	20%	▲ 65%	45%	165	▲ 44%	28%
Been kicked, bitten or hit	22%	▲ 50%	28%	5%	▲ 44%	39%	5%	▲ 23%	18%

Note: ▲ = Gender difference statistically significant at .05 level.
Source: Minnesota Student Health Surveys, 1995, 1998 and 2001.

Table 30 presents the percentage of males and females who reported that they had engaged in some anti-social behaviors in the last 12 months, such as damaging or destroying property, hitting or beating up another person or engaging in dangerous behaviors. The results show an extreme pattern. Males were disproportionately represented among those anti-social behaviors. The exception was the information obtained from the new question about thinking about killing yourself in the 2001 survey. The percentages of responses show more females in grades 9 and 12 who felt depressed and thought about killing themselves. National data would support this trend, however, national data would also reveal a higher percentage of males than female succeeded at suicide.

Table 30
Students Who Report Having the Following Anti-Social Behaviors
During the Last 12 Months

	Gr. 6			Gr. 9			Gr. 12		
	Femal	Male	Diff	Female	Male	Diff	Femal	Male	Diff
1995									
Damaged or destroyed property	10%	▲ 26%	16%	17%	▲ 32%	15%	13%	▲ 38%	25%
Hit or beat up another person	16%	▲ 48%	32%	13%	▲ 39%	26%	6%	▲ 30%	24%
Engaged doing things dangerous	43%	▲ 74%	31%	62%	▲ 80%	18%	64%	▲ 88%	24%
1998									
Damaged or destroyed property	11%	▲ 26%	15%	19%	▲ 43%	24%	4%	▲ 21%	17%
Hit or beat up another person	14%	▲ 33%	19%	17%	▲ 45%	28%	14%	21%	7%
Engaged doing things dangerous	40%	▲ 65%	25%	54%	▲ 78%	24%	60%	▲ 80%	20%
2001									
Damaged or destroyed property	11%	▲ 28%	17%	17%	▲ 46%	29%	11%	▲ 43%	32%
Hit or beat up another person	15%	▲ 38%	23%	18%	▲ 44%	26%	9%	▲ 39%	30%
Engaged doing things dangerous	32%	▲ 74%	42%	50%	▲ 79%	29%	64%	▲ 87%	23%
Thought about killing yourself	13%	▲ 25%	12%	▲ 41%	29%	12%	▲42%	33%	9%

Note: ▲ = Gender difference statistically significant at .05 level.
Source: Minnesota Student Health Surveys, 1995, 1998 and 2001.

Table 31 presents the percentage of surveyed males and females who reported that they never engaged in risk-taking behaviors related specifically to alcohol, tobacco, and/or other drug use. The results reveal a slight tendency for the gender gaps to be somewhat larger for older students. That is, risk-taking behaviors increased with grade for both genders, but sometimes the increase for males exceeded the increase for females, resulting in a widening of the gender gap. Specifically, significantly fewer females were involved in using drugs, binge drinking and using tobacco products by grade 12.

Table 31
Students Who Report Never Using Chemicals
During the Last 12 Months

	Gr. 6			Gr. 9			Gr. 12		
	Femal	Male	Diff	Female	Male	Diff	Female	Male	Diff
1995									
Received illegal drugs at school	98%	94%	2%	▲ 80%	56%	24%	▲ 69%	40%	29%
Marijuana or hashish	99%	97%	2%	80%	72%	8%	▲ 66%	43%	23%
Other people's prescription drugs	99%	96%	3%	94%	91%	3%	▲ 92%	82%	10%
Alcoholic beverages to drink	94%	87%	7%	61%	56%	5%	34%	28%	6%
Frequent binge drinking (5 or more)				▲ 89%	76%	13%	▲ 72%	53%	19%
Any tobacco products	92%	93%	1%	▲ 94%	79%	15%	▲ 91%	54%	37%
Cigarettes	96%	88%	8%	59%	58%	1%	▲ 46%	36%	10%
1998									
Received illegal drugs at school	99%	95%	4%	▲ 86%	66%	20%	▲ 90%	63%	27%
Marijuana or hashish	99%	96%	3%	▲ 92%	78%	14%	▲ 75%	65%	10%
Other people's prescription drugs	98%	97%	1%	95%	95%	0%	99%	91%	8%
Alcoholic beverages to drink	95%	89%	6%	52%	50%	2%	40%	33%	7%
Frequent binge drinking (5 or more)				89%	81%	8%	▲ 77%	58%	19%
Cigarettes	97%	96%	1%	73%	70%	3%	59%	50%	9%
2001									
Received illegal drugs at school	98%	96%	2%	▲ 86%	72%	14%	▲ 73%	42%	31%
Marijuana or hashish	98%	99%	1%	▲ 89%	73%	16%	▲ 64%	43%	21%
Other people's prescription drugs	97%	99%	2%	97%	88%	9%	85%	76%	9%
Alcoholic beverages to drink	94%	89%	5%	62%	62%	0%	20%	15%	5%
Frequent binge drinking (5 or more)	98%	99%	1%	99%	93%	6%	▲ 68%	51%	17%
Any tobacco products	98%	96%	2%	▲ 86%	73%	13%	▲ 42%	27%	15%
Cigarettes	99%	97%	2%	86%	80%	6%	43%	42%	1%
Cigars, cigarillos, or little cigars	99%	97%	2%	▲ 96%	82%	14%	▲ 91%	50%	41%

Note: ▲ = Gender difference statistically significant at .05 level.
Source: Minnesota Student Health Surveys, 1995, 1998 and 2001.

Table 32 presents information by gender about incidents and suspensions reported from each of Edina Public Schools. The results reveal an extreme pattern of males disproportionately represented for incidents or suspensions across grades and schools.

Table 32
Students Identified with Incidents and Suspensions

	Female		Male		
	Number	Percent	Number	Percent	Total
Incidents					
2000-01	70	32%	150	▲ 68%	220
1999-00	74	35%	136	▲ 65%	210
1998-99	61	31%	133	▲ 69%	194
1997-98	67	35%	126	▲ 65%	193
1996-97	52	28%	137	▲ 72%	189
1995-96	46	32%	98	▲ 68%	144
1994-95	87	46%	104	▲ 54%	191
1993-94	72	40%	107	▲ 60%	179
1992-93	83	44%	106	▲ 56%	189
1991-92	78	37%	135	▲ 63%	213
1990-91	86	37%	145	▲ 63%	231
Suspensions					
Edina High	24	14%	148	▲ 86%	172
Middle Schools	3	3%	94	▲ 97%	97
Elementary	0	0%	4	▲ 100%	4
Total	**27**	**10%**	**246**	▲ **90%**	**273**

Note: ▲ = Gender difference statistically significant at .05 level.

In summary, results in this section suggest that females were better engaged in school than males. Females tended use their time more constructively in activities such as doing homework, participating in music, arts, church, or volunteer work, etc. Males devoted more time to computer or video games. Males were engaged in more risk-taking behaviors such as violence or chemical use than females. Also, more males appeared to be victims of violence than females.

Analyses of these data across grades revealed a tendency for gender gaps in constructively using time and risk-taking behaviors starting at grade 9 and higher. In general, student risk-taking behaviors increased with each grade for both genders, but sometimes the increase for males exceeded the increase for females, resulting in a widening of the gender gap by grade 12.

Statewide and National Data

In order to examine whether gender differences in school or learning are merely a local issue or a statewide, nationwide or international phenomena, data were collected from Minnesota, and the United States.

Table 33 presents the number and percentage of high school student's graduation and dropout statewide by gender. The results show that more females graduated from Minnesota high schools and more males dropped out of Minnesota schools.

Table 33
Four-year High School Completion and Dropout Rates
Minnesota Class of 1999

	Female		Male		Total
	Number	Percent	Number	Percent	
Students	31351	49%	32903	51%	64254
Graduates	25726	82%	24970	76%	50696
Dropouts	2725	9%	4137	13%	6862
Continuing	2900	9%	3796	12%	6696

Source: 2000 Minnesota Education Yearbook, The Status of Pre-K—12 Education in Minnesota. The Office of Educational Accountability, College of Education and Human Development, University of Minnesota, 2000.

Table 34 presents Minnesota student average results from the Minnesota Comprehensive Assessments (MCA) for grades 3 and 5 and the Minnesota Basic Standards Tests (BST) for grade 8. This table reports percentages of students who met the Minnesota High Standards on the MCA (percentages of students at "Above Grade Level" or "Advanced Level) and who met the Minnesota Basic Standards on the BST. The results reveal that females outperformed males in reading and writing, while males achieved slightly higher than females in mathematics. However, the gender gap in reading and writing was wider than the gender gap in mathematics.

Table 34
Minnesota Statewide Achievement Testing Data
1998-2000

		Reading			Math			Writing		
		Female	Male	Diff	Female	Male	Diff	Female	Male	Diff
Grade 3	1998	41%	30%	11%	34%	36%	2%			
	1999	44%	36%	8%	41%	44%	3%			
	2000	49%	40%	9%	46%	47%	1%			
Grade 5	1998	43%	34%	9%	30%	32%	2%	52%	32%	20%
	1999	50%	40%	10%	36%	37%	1%	55%	36%	19%
	2000	56%	47%	9%	45%	46%	1%	51%	32%	19%
Grade 8	1998	71%	66%	5%	70%	73%	3%			
	1999	77%	74%	3%	69%	71%	2%	91%	79%	12%
	2000	83%	77%	6%	71%	72%	1%	91%	82%	9%

Note: Minnesota Grade 3 and 5 students take the Minnesota Comprehensive Assessments and Grade 8 students take the Minnesota Basic Standards Tests.
Source: 2000 Minnesota Education Yearbook, The Status of Pre-K—12 Education in Minnesota. The Office of Educational Accountability, University of Minnesota, 2000.

Table 35 presents by gender the average reading, writing, mathematics and science achievement for grades 4, 8, and 12 nationally in 1992, 1994, 1998 and 2000. As shown in Table 35, the gender differences varied depending upon the learning subjects or areas. The gender differences in reading and writing reflected advantages for females, while in science, the gender differences observed favored males. Males had significantly higher average mathematical achievement than females at grade 4 and grade 12. In grade 8, females and males had similar achievement in mathematics.

Table 36 shows the percentages of males and females nationally that had completed high school and high school completers with some college from 1971 to 1998. As shown in Table 36, before 1980, the educational attainment of males was higher than that of females at all educational levels. In the early 1980s, females equaled males, and by the late 1980s, females surpassed males in terms of completion of a high school education and college attendance. In 1998, females by age 25 to 29 were somewhat more likely than males to have graduated from high school (90 percent of females versus 87 percent of males) and enroll in college (68 percent of females versus 63 percent of males).

Table 35
Test Results from National Assessment of Educational Progress
1992-2000
Grades 4, 8 and 12

	Reading					Writing				
	Female		Male			Female		Male		
Year	Score	SE	Score	SE	Diff	Score	SE	Score	SE	Diff
Grade 4										
2000	▲ 222	0.9	212	1.1	10					
1998	▲ 220	0.7	214	1.1	6	▲ 158	0.7	142	0.8	16
1994	▲ 220	1.1	209	1.3	11					
1992	▲ 221	1	213	1.2	8					
Grade 8										
1998	▲ 270	0.9	257	0.9	13					
1994	▲ 267	1	252	1	15	▲ 160	0.6	140	0.8	20
1992	▲ 267	1	254	1	13					
Grade 12										
1998	▲ 298	0.7	283	1	15					
1994	▲ 294	0.8	280	0.8	14	▲ 159	0.7	140	0.7	19
1992	▲ 297	0.7	287	0.7	10					

	Mathematics					Science				
	Female		Male			Female		Male		
Year	Score	SE	Score	SE	Diff	Score	SE	Score	SE	Diff
Grade 4										
2000	226	0.9	▲ 229	1	3	147	0.8	▲ 153	0.8	6
1996	222	1	▲ 226	1.1	4	149	0.9	151	0.9	2
1992	219	1	221	0.8	2					
1990	213	1.1	214	1.2	1					
Grade 8										
2000	274	0.9	277	0.9	3	147	0.8	▲ 154	0.7	7
1996	272	1.1	272	1.4	0	149	1.1	151	1	2
1992	269	1	268	1.1	1					
1990	262	1.3	263	1.6	1					
Grade 12										
2000	299	0.9	▲ 303	1.1	4	145	1	▲ 148	1.1	3
1996	303	1.1	305	1.1	2	148	0.9	▲ 152	1.2	4
1992	298	1	▲ 301	1.1	3					
1990	291	1.3	▲ 297	1.4	6					

Note: ▲ = Gender difference statistically significant at .05 level.
Source: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), The Nation's Report Card, 2001.

Table 36
Percentage of 25 to 29 Year-Old Who Had Completed High School or High School Completers with Some College 1971-1998

	High School Completers			College Attendees		
Year	M	F	Total	M	F	Total
1971	79.1	76.5	77.7	48.7	38.4	43.6
1972	80.5	79.2	79.8	50.7	39.5	45.1
1973	80.6	79.8	80.2	51.4	39.4	45.3
1974	83.1	80.8	81.9	53.8	44.1	48.9
1975	84.5	81.7	83.1	56.0	44.1	50.1
1976	86.0	83.5	84.7	58.2	46.0	52.1
1977	86.6	84.2	85.4	58.0	48.5	53.2
1978	86.0	84.6	85.3	59.3	49.6	54.4
1979	86.3	84.9	85.6	57.7	50.6	54.1
1980	85.4	85.5	85.4	55.8	49.0	52.3
1981	86.5	86.1	86.3	52.7	47.5	50.1
1982	86.3	86.1	86.2	51.5	48.3	49.9
1983	86.0	86.0	86.0	52.1	49.0	50.6
1984	85.6	86.3	85.9	50.9	49.3	50.1
1985	85.9	86.4	86.2	51.5	50.1	50.8
1986	85.9	86.4	86.1	51.4	50.8	51.0
1987	85.5	86.4	86.0	50.4	51.0	50.7
1988	84.7	87.1	85.9	51.6	50.1	50.8
1989	84.4	86.5	85.5	52.0	50.5	51.3
1990	84.4	87.0	85.7	51.8	52.1	52.0
1991	84.9	85.8	85.4	52.3	53.8	53.1
1992	86.1	86.5	86.3	56.0	57.4	56.7
1993	86.0	87.4	86.7	57.6	60.1	58.9
1994	84.5	87.6	86.1	58.9	62.0	60.5
1995	86.3	87.4	86.9	60.6	63.9	62.2
1996	86.5	88.1	87.3	63.1	66.3	64.7
1997	85.8	88.9	87.4	64.0	66.8	65.4
1998	86.6	89.6	88.1	63.0	68.1	65.6

Note: The Current Population Survey (CPS) questions used to obtain educational attainment were changed in 1992. From 1992 to 1998, high school completers includes those who have a high school diploma or an equivalency certificate. From 1971 to 1991, high school completers are individuals who have completed 4 years of high school or more (but may not have a diploma or equivalency certificate.) Included in total but not shown separately are other racial/ethnic groups.

Source: U.S. Department of Commerce, Bureau of the Census, March Current Population Surveys.

Results suggest that in Edina, Minnesota and the United States, females tended to perform significantly higher than males in reading and writing while males tended to perform significantly higher than females in mathematics and science. However, the gender differences in reading and writing for males appeared greater than the gender differences in mathematics for females. It is important to note that after 1998

more females completed high school education and attended college than males based on data from the United State Department of Commerce. The data indicate a change in the trend for the educational attainment of males to be higher than that for females. Now, females exceed males in acquiring education at all levels.

Discussion

Data mentioned above provide preliminary observations, evidence and useful insights into gender considerations in the Edina Public Schools. Findings from data provide important questions for educators regarding pedagogical theories and practice. How can we develop appropriate policies that provide opportunities for both boys and girls in our schools? How can educators develop teaching strategies that promote student potential? How can we learn and implement educational practices that empower and sensitize both boys and girls?

Several years ago, British and Australian educators addressed the gender differences, searched for the reasons for the differences and explored ways for both genders to access equal opportunity in learning. Research has been conducted at a number of levels to explain the gender differences in academics. Issues, such as teacher-student interaction, curriculum content, and the gender image of subjects, modes of assessment, single-sex schooling, labor market changes, and the concepts of masculinity, in particular, were examined. It seems that educators may find it worthwhile to know more about gender and learning implications for schools and classrooms.

Gendered Adolescence

Data results suggest gender differences in perspectives of environment and student behaviors, including constructive and risk-taking behaviors, appeared to take hold at adolescence (grades 8 and 9). Adolescence is a naturally occurring time of transition; a period when changes happen that affect the experience of self and relationships with others. Thus, adolescence is a time of epistemological crisis; an age when issues of interpretation come to the fore.

Research shows that males and females each have their own equally painful sufferings. Girls tend to suffer the majority of depression or eating disorders. Boys tend to be moody and aggressive. Boys seek competitive sports, or any physical or motor activities through which they can release tension, take risks and show competitive prowess.

Often adolescent boys and girls seem tough, but they need an emotional center and secure base now more than ever before. The key to helping them navigate adolescence is not to leave them alone through the

process, but rather be deliberate about finding directions and options that channel their energy positively. This supports the attention that schools give to individual and group counseling and the focus on personal, social, and emotional characteristics that many school curriculums adopt.

Gendered Special Education, Remedial and Intervention Programs

In Special Education programs, there are more than three times as many boys as girls. In particular, boys are three times more likely to be identified as Attention Deficit Hyperactivity Disorder (ADHD) as girls. In alternative schools for what is called "social, emotional or behavioral difficulties," there are more boys than girls. In school-based remedial programs, more boys were identified than girls. It is apparent that specialized programming is characteristically dominated by boys. There is a great deal to learn regarding classroom and school practices and the impact on learning for boys and girls. Traditional approaches and solutions to educational dilemmas will require responsible and informed educators for the future.

Gendered School Subjects

Findings show that there are patterns in course-taking behaviors in boys and girls. The ACT, PSAT, SAT results and the participation rates in AP courses revealed that language arts and social studies appeared to be a more female province, while computer science, economics, sciences (especially physics and chemistry) appeared to be a male province. There appears to be more boys enrolled in "basic" or "intervention-like" classes with less boys enrolled in advanced English and literature subjects.

It is a widely-held belief that boys enrolled in the 'maleness' of sciences, computers, and economics and the "femaleness" of language arts and social studies may be a lack of female role models in science, computer and economics and of male role models in language arts and social studies. Therefore, raising the status of teaching in order to attract more people into the profession may be helpful, thus providing male role models for language arts and social studies and to attract more women into sciences and math profession, hence providing female role models for girls.

In England and Wales, the National Curriculum was introduced to reduce many gender inequalities in subjects. In most of the mainstream school subjects, the gap between males and females entry is less than 5% (Arnot et al, 1998). The National Curriculum thus compels girls into mathematics, science, and technology. As the Graduation Standards are implemented in Minnesota public schools, the minimum requirements may need to be established to reinforce students' participation in core subjects, thereby reducing the gender gap patterns in course-taking behaviors.

Gendered Classroom Environment

Females are more engaged in school and classroom learning. Girls tend to work hard, receive higher grades and more recognition from their schools and teachers. On the other hand, boys are between three and four times as likely to be suspended as girls. Boys have more incidents of ill-disciplined behaviors, and risk-taking behaviors. Because boys are generally more impulsive a boy gets into far more trouble in class and in school. The kind of classroom discipline that works for girls—often inconsistent at times, seemingly friendly, and in general, lacking profound authority—does not work so well for many boys in their middle or early high school years.

Findings and Considerations for Practice

This study, in general, demonstrates that middle or high school boys now lag behind girls on many measures of academic performance, such as social studies, linguistics and literature, and social well-being, while girls have made great progress and caught up with boys in mathematics and science. However, few differences were found in developmental cognitive abilities in the verbal skills between boys and girls. Even the average achievement between boys and girls was similar, the distributions, however, were different. A disproportionate number of males performed at the lowest-achieving level while a disproportionate number of females performed at or above the highest-achieving level. At the high-achieving level and upper grades, however, male average achievement appeared to be higher than female achievement, although the number of males in this level is much less.

In the secondary schools, females were clearly more representative on the A Honor Roll and received better grades and more awards than males. Also, there were gender differences in what boys and girls participated in for curricular and extracurricular activities. More females participated in Advanced Placement language arts and social studies courses and took AP tests, while more males participated in AP courses and tests in computers, sciences (particularly chemistry and physics) and economics.

It also appeared that more boys, including elementary-age and secondary-age boys, receive suspensions, were diagnosed as learning disabled, and were represented in greater numbers in alternative programs, remedial and intervention programs, and special education services.

In addition, this study shows that gender differences appear to start as adolescence begins, in particular, in grade eight or nine, and widens during the upper grades. In general, there were few gender differences in areas such as achievement, performance, effort, and risk-taking behaviors in elementary students.

Results from a variety of surveys suggest that females tended to be more engaged than males while in middle and high school. More females reported spending more time on their homework, receiving higher grades in classes, using their time more constructively in music and spiritual activities, reading for fun, or engaging in volunteer work more than their male peers. Older adolescent males consistently showed more risk-taking behaviors than females such as violence, and substance abuse. Although these risk-taking behaviors increased for both boys and girls, as students became older, boys showed a greater increase.

Finally, comparison of statewide and national data mirrored Edina Public School District findings. Gender differences are also apparent in important educational attainments such as high school completion and college attendance. Prior to the 1980s, the number of females was less than or equal to the number of males completing high school and entering college. Subsequent to 1990, the educational attainment of females was higher than males nationally.

In order to verify and interpret the quantitative results, findings were discussed with teachers and school/district administrators. Edina educators generated following considerations and recommendations for educational practices, instruction strategies and policies for improving educational systems which meet both boys and girls' needs.

1. Attract both male and female teachers all areas of education to provide role models for both genders. This provides all children the opportunity to better understand and experience intelligence and behavioral learning styles from men and women.

2. Initiate professional development for educators and parents at all levels of education. Gender differences appear to gather momentum around late grade 5 through high school. Focus on early-to-late middle schooling years during adolescence due to the gender differences onset in early secondary schooling years. Support teaching practices that pay attention to gender learning styles socially, intellectually, emotionally, and physically. Support and fund professional staff development that recognizes male and female brain differences. Devote training time for staff to explore their classroom practices while opening their minds to document evidence of gender differences that influence learning.

3. Engage high school students, parents, and educators in dialogue about content of course material at the high school level. Share data with students, parents, and staff and conduct focus groups that engage individuals in new ways to approach entrenched behaviors. Integrate into professional development efforts to deliberately examine how course content and instructional materials may be gender specific or gender biased.

4. Using the data, engage in strategic planning that includes information and communication. Attend fiscally and resourcefully to school and classroom decisions that affect boys and communication. Attend fiscally and resourcefully to school and classroom decisions that affect boys and girls in areas specifically, such as honor rolls, recognition of academic achievement, and adult expectations and traditionally held perspectives on learner performances.

5. Conduct professional development and apply brain-based research that gives attention to understanding innate gender differences.

6. Pay attention to the socializing culture in schools and classrooms. It is plausible that adult expectations and actions support traditionally held beliefs.

7. Consider innovative classroom arrangements that customize teaching and learning to meet the unique needs of boys and girls.

8. Invite and consider the use of dads, grandfathers, big brothers to school and to classrooms.

9. Design mentor programs for both boys and girls. Focus on the unique characteristics of learners. Coach, tutor, and sponsor individual students based on each individuals specific interests and goals.

10. Don't confuse discipline with "breaking the spirit" of youth. Be careful how students are reprimanded and counseled.

11. Consider educational alternatives to suspension from school. Boys need to be in the classroom and in school.

12. Conduct student to student, girls to boys dialogues and allow the students to ask the opposite gender:
    - What are the conflicts and questions we have with each other?
    - What do we want in the way of behavior and understanding from one another?
    - What do we appreciate or admire about each other?

13. Continue to explore and find effective ways to support academic engagement on the part of all students, especially boys. Consider summer school, after and before school options. Continue to support programs at school that capture and help nurture boys and girls separately and collectively.

14. The models of best practice are multiple and complex, yet very attainable for educators and communities. Know that this is pioneer work; so involve other school districts in solutions. Engage in information sharing seminars with other school districts.

15. Overall, keep expectations high for all students and communicate that regularly to them!

In addition, the literature suggests that gender, along with 'race', class, disability, sexuality and age, has a substantial effect on the ways in which children negotiate their personal relationship between academic achievement, school cultures and home and peer culture. Better understanding gender research may help us plan toward a more effective set-of-solutions for improving student performance.

As researchers and educators, we acknowledge the differences among students and strive to understand both gender groups and serve them responsibly. We hope this study not only provides evidence of gender differences that may influence student learning and development, but also suggests a variety of questions for future research and implications for practical teaching and learning. It is hoped that educators will gain a more in-depth understanding of student learning and gender differences and the implications for teaching and learning practice.

Notes

1. Laura Waldon, Edina school district releases results of gender study. *Edina Sun Current*, May 8 2002. Katherine Kersten, Now girls have the advantage in school. *Star Tribune*, May 22, 2002

2. **Edina Gifted Education Services Program**: This service identifies the educational needs of *all students* on an *ongoing basis*. Our goal is to advocate for students with outstanding gifts or talents and provide rigor and challenge in response to their individual needs. See the detailed online information at http://www.edina.k12.mn.us.

3. **Success Center**: This program is one of the remedial instructional services that the Edina Public Schools provides for low-achieving students. One hour is provided before or after school for students to increase their academic achievement.

4. **Achievement Level Test (ALT)**: ALT is an assessment instrument that is administered in the Edina Public Schools at Grades 2 through 8 in reading and mathematics. See the detailed online information at http://www.edina.k12.mn.us.

5. **Minnesota Comprehensive Assessments (MCAs):** These tests are given at the third, fifth and tenth grade levels to evaluate student progress on the Preparatory Standards and to measure the success of schools and districts in improving achievement over time.

6. **Basic Standards Tests (BSTs):** The Minnesota Basic Standards Tests (BST) measure if a student has learned the basic skills needed to live and work in today's society. Students must pass tests in reading, mathematics and writing to show they meet the Basic Standards and in order to be eligible to graduate from a Minnesota public high school. The reading and mathematics tests are first given in grade 8 and the written composition test is first given in grade 10.

7. **PLAN:** PLAN assessment is given to all students in grade 10 and provides information for academic achievement, career planning, instructional support and program evaluation for Grade ten students. PLAN test results are reported in a scale score ranging from 1 to 32. See http://www.act.org for detailed information.

8. **ACT Assessment Program**: The ACT assessment program measures educational development and readiness to pursue college-level coursework in English, mathematics, natural science, and social science.

9. **Advanced Placement**: Advanced Placement (AP) gives highly motivated students an opportunity to take college-level courses and exams while still in high school. There are now 32 different AP courses to choose from, in 18 different subject areas, offered by approximately 14,000 high schools worldwide.

10. **PSAT**: The PSAT assesses student knowledge and skills developed through years of study in a wide range of courses and experiences outside the classroom. Although the PSAT and the SAT Program tests are not directly related to a specific high school curriculum, they are developed to reflect the kinds of academic experiences that teachers consider important.

11. **SAT**: The SAT and ACT are both widely-used admission tests. Many colleges accept either one, but some require one or the other. The SAT measures verbal reasoning, critical reading, and math problem solving skills. It tells how well test takers uses the skills and knowledge they have learned so far, both in and out of school.

12. **Minnesota Student Survey**: This survey was administered by the Department of Children, Families and Learning of the Minnesota State. This survey was designed to address the issues that confront youth and to evaluate trends over time. It has been administered every 3 years since 1989. Results can be used to evaluate and improve prevention efforts.

13. **Developmental Assets Survey**: The Developmental Assets Survey: A Profile of Your Youth was developed by the Search Institute. The asset framework represents a common core of developmental building blocks crucial for all youth. The survey results show the extent to which Edina students experience these assets and how the assets relate to their behavior. Usually the developmental assets are grouped into two major types. External assets are the networks of support, opportunities and people that stimulate and nurture positive development in youth. Internal assets are the young person's own commitments, values and competencies.

14. **Edina Student Opinion Survey**: Beginning in 2000, the Edina Public Schools conducted opinion surveys of all students, school staff, and parents. The surveys were designed to examine feelings and perspectives from students, staff, and parents regarding their educational experience with the Edina Public Schools.

References

Abraham, J. (1995). *Divide and School: gender and class dynamics in comprehensive education*. London: Falmer Press.

Acker, S. (1994). *Gender Education*. Buckingham: Open University Press.

Aldershot, H. (1998). *Japan and the West: the perception gap*. England; Brookfield, Vt., USA: Ashgate.

Alexanderson, K. (1999). An Assessment Protocol for Gender Analysis of Medical Literature. *Women and Health*, 29 (2), 81-98.

American Association of University Women. (1992). *The AAUW Report: How Schools Shortchange Girls*. Washington, D.C.: American Association of University Women.

American Association of University Women. (1994). *The AAUW Report: How Schools Shortchange Girls*. Washington, D.C.: American Association of University Women.

American Association of University Women. (1999). *Gender gaps* : where schools still fail our children. New York : Marlowe & Co.

Arnot, M. (1991). Equality and democracy: a decade of struggle over education. *British Journal of Sociology of Education*. 12, pp. 447-466.

Arnot, M., David, M. & Weiner, G. (1996). *Educational Reforms and Gender Equality in Schools*. Manchester, Equal Opportunities Commission.

Arnot, M., Gary, J., James, M. & Rudduck, J. (1998). *Recent Research on Gender and Educational Performance*. London, Office for Standards in Education.

Aronson, J. and others. (1999). When White Men Can't Do math: Necessary and Sufficient Factors in Stereotype Threat. *Journal of Experimental Social Psychology*, 35(1), 29-46.

Arshad, R. (1992). The interconnections of gender, class and ethnicity within educational contexts, in: S. Brown. & S. Riddell (Eds). *Class, Race and Gender in schools*. Edinburgh: Scottish Council for Research in Education.

Baru, E. (1998). The American Girls Premiere Review. *Multimedia Schools*, 5(5), 63-64.

Bertaux, N. E. & Gerring, L. F. (1994). Gender Gaps in Cincinnati Public Schools, Then and Now. *Equity & Excellence in Education*, 27(3), 11-18.

Bhargava, A., Kirova-Petrova, A., & McNair, S. (1999). Computers, Gender Bias, and Young Children. *Information Technology in Childhood Education Annual, 263-74*.

Blatchford, P., Burke, J., Farquhar, C., Pewlis, I. & Tizzard, B. (1985). Educational achievement in the infant school: the influence of ethnic origin, gender and home on entry skills. *Educational Research*, 27, pp. 52-60.

Boaler, J. (1997). Reclaiming school mathematics: the girls fight back. *Gender and Education*, 9, pp. 285-305.

Bradshaw, J., Clegg, S. & Trayhurn, D. (1995). An Investigation into Gender Bias in Educational Software Used in English Primary Schools, *Gender and Education*, 7(2), 167-174.

Bright, M. (1998). Girls really are better than boys—official, *Observer*, 4 January.

Brown, L.M. & Gilligan, C. (1992). *Meeting at the Crossroads Women's Psychology and Girls' Development*. Boston: Ballantine Books

Brown, S. & Riddell, S. (1992). (Eds). *Class, Race and Gender in Schools*. Edinburgh: Scottish Council for Research in Education.

Burke, G. (1992). *Equity for Women in the 1990s: Regents Policy and Action Plan with Supporting Background*. U.S. New York, ED372974.

Burton, L., (1995). Moving towards a feminist epistemology of mathematics, in: P. Rogers & G. Kaiser (Eds). *Equity in Mathematics Education*. Lews: Falmer Press.

Campbell, G. Jr. (1996). *Bridging the Ethnic and Gender Gaps in Engineering*. U.S. New York. NACME Research Letter, 6(1).

Carvel, J. (1986). Schools urged to focus on low achieving boys. *Guardian*, 11, July.

Carvel, J. (1988). Help for boys lagging behind girls at school, *Guardian*, 5 January.

Cheng, Y., Payne, J. & Witherspoon, S. (1995). *Science and Mathematics in Full-time Education after 16*. London, Department for Education and Employment.

Clark, A. & Trafford, J. S. (1995). Boys into Modern Languages: an investigation of the discrepancy in attitudes and Performance between boys and girls in modern languages. *Gender and Education*, 7(3).

Clarke, A. & Trafford, J. 91996). Return to gender: boys' and girls' attitudes and achievements. *Language Learning Journal*, 14, pp. 40-49.

Cohen, M. (1996). Is there a space for the achieving girl? in: P. Murphy & C. Gipps (Eds). *Equity in the Classroom: towards effective pedagogy for girls and boys*. London: Falmer Press.

Cohen, M. (1998). 'A habit of healthy idleness': boys' underachievement in historical perspective, in: D. Epstein, J. Elwood, V. Hey & J. Maw (Eds) *Failing boy*? Issues in Gender and Achievement. Buckingham: Open University Press.

Cole, N. & Moss, P. (1989). Bias in test use, in: R. Lynn: *Educational Measurement*, 3rd edn. New York: National council on Measurement in Education/American council on Education Macmillan.

Connell, R. (1995). *Masculinity*. Cambridge: Policy Press.

Davison, M. et al. (2001). *The 2001 Minnesota Education Yearbook*. Minneapolis: The Office of Educational Accountability, University of Minnesota.

Danforth, J. (2001). The outcome of parent training using the Behavior Management Flow Chart with a mother and her twin boys with Oppositional Defiant. Disorder and Attention-Deficit Hyperactivity Disorder. *Violence & Abuse Abstracts*, 7(3), 163-252.

Debold, E., Wilson, M., & Malave, I. (1993). Mother Daughter Revolution: From Betrayal to Power. Mass.: Addison-Wesley.

Deem, R. (1980). *Schooling for Women's Work*. London: Routledge & Kegan Paul.

Delamont, S. (1998). Educating the Other: Gender, Power, and Schooling. *British Educational Research Journal*, 24(5), 35.

Desmarais, S., & Curtis, J. (1997). Gender Differences in Pay Histories and Views on Pay Entitlement among University Students. *A Journal of Research*, 37(9-10), 623-42.

Education Reform Institute, (1998). *Improving America's Schools. Creating a Better School Environment: Tying the Pieces Together.* [www.ncbe.gwu.edu/iasconferences/archives/1998/institutes/environment].

Elwood, J. & Comber, C. (1996). *Gender Differences in Examinations at 18+: final report.* London: University of London Institute of Education.

Epstein, D., Elwood, J., Hey, V. & Maw, J. (1998). Failing Boys, Issues in Gender and Achievement. Buckingham: Open University Press.

Epstein, D. (1999). *Sex and Sensibilities*. London Times Educational Supplement, July 2 1999, Issue 4331, 17.

Epstein, D. (1999). Where the Kids Are: Power Relations in Classrooms and Playgrounds. *British Educational Research Journal*, 25(3), 401-404.

Enstam, E.Y., (1998). *Women and the creation of urban life* : Dallas, Texas, 1843-1920. College Station : Texas A&M University Press.

Family Life Council of Greater Greensboro. (1996). *Wise Guys: Male Responsibility Curriculum. Greensbora*, N.C.: Family Life Council of Greater Greensbora.

Fawcett Society, The (1986). *Exams for Boys*. London: Fawcett Society.

Fennema, E. (1990). Teachers' attributions and beliefs about girls, boys and mathematics. *Educational Studies in Mathematics*. 21, pp. 55-69.

Foster, M. (1999). Race, Class, and Gender in Educational Research: Surveying the Political Terrain. *Educational Policy*, 13(1/2), 77-85.

Francis, B. (2000). The Gendered Subject: students' subject preferences and discussions of gender and subject ability. *Oxford Review of Education 26*, no. 1. pp. 35-48.

Furlong, V. (1985). *The Deviant Pupil*. in: Milton Keynes: Open University Press. Harris, S., Nixon, J. & Rudduck, J. (1993).

Gary, J. (1993). *Men Are From Mars, Women Are From Venus*. San Francisco: Harper San Francisco.

Gatenby, B. (1999). Exploring Gender, Management Education, and Careers: Speaking in the Silences. *Gender and Education*, 11(3), 381-94.

Gates, A. (1999). In Praise of the Most Unpopular Girl at Lawndale. *New York Times* (late ed., East Coast), May 16, 1999, sec. 2, p. 21.

Gilligan, C., Ward, J.V., Taylor, J.M., & Bardige, B. (1990). *Mapping the Moral Domain: A Contribution of Women's Thinking to Psychological Theory & Education*. Boston: Harvard University Press.

Gilligan, C. (1993). *In a Different Voice: Psychological Theory and Women's Development*. Boston: Harvard University Press.

Gilligan, C. (1996).The centrality of relationship in human development: a puzzle some evidence, and a theory, in: Gil Noam & Kurt Fisher (Eds) *Development and Vulnerability in Close Relationships*. Mahwah, N.J.: Erlbaum.

Gilligan, C. & Sullivan, A. M. (1997). *Between Voice & Silence: Women & Girls, Race & Relationship*. Boston: Harvard University Press.

Gilligan, C. & Woyschner, C. A. (1997). *Minding Women: Reshaping the Educational realm*. Boston: Harvard University Press.

Gipps, C. & Murphy, P. (1995). *A Fair Test*? Buckingham: Open University Press.

Gold, K. (1995). Hard times for Britain's lost boys, *New Scientist*, 4. February.

Gorard, S., Rees, Gareth., & Salisbury, J. (1999). Re-appraising the Apparent Underachievement of Boys at School. *Gender and Education*, 11(4), 441-454.

Gordon, T. (1996). Citizenship, difference and marginality in schools—spatial and embodied aspects of gender construction, in: P. Murphy & C. Gipps (Eds) *Equity in the Classroom: towards effective pedagogy for girls and boys*. London: Falmer Press.

Griffin, C. (1985). *Typical Girls*? London: Routledge & Kegan Paul.

Griffiths, M. (1998). Social justice in school. *British Educational Research Journal*. 24, pp. 301-316.

Grosz-Ngatae, M. & Kokole, H. O., Eds. (1997). *Gendered encounters : challenging cultural boundaries and social hierarchies in Africa*. New York : Routledge. Kokole, Omari H.

Guerra, S., Duarte, J., & Mota, J. (2001). Physical activity and cardiovascular disease risk factors in schoolchildren. *European Physical Education Review* 7, no. 3. pp. 269-281

Gurian, M. (1996). *The Wonder of Boys. What Parents, Mentors and Educators Can Do to Raise boys into exceptional men*. New York: Jerrmy P. Tarcher/Putnam.

Gurian, M. (1999). *A Fine Young Man. What parents, mentors and educators can do to shape adolescent boys into exceptional men*. New York: Jerrmy P. Tarcher/Putnam.

Gurian, M., Henley, P., & Trueman, T. (2001). *Boys and Girls Learn Differently! A guide for teachers and parents*. San Francisco: Jossey-Bass Publishers.

Habarana, S.L. (1998). *Gender analysis and reform of irrigation management : concepts, cases, and gaps in knowledge : proceedings of the Workshop on Gender and Water*. Douglas Merrey and Shirish Baviskar, Eds. Conference: Workshop on Gender and Water (1997 : Habarana, Sri Lanka) Colombo, Sri Lanka : International Water Management Institute.

Hallden, G., (1999). 'To be, or not to be': absurd and humoristic descriptions as a strategy to avoid idyllic life stories- boys write about family life. *Gender and Education*, 11(4), 469-479.

Hammett, R.F. (1997). Computers in Schools: White Boys Only? *English Quarterly*, 28(4), 29(1).

Harding, J. (1996). Girls' achievements in science and technology: implications for pedagogy: in: P. Murphy & C. Gipps (Eds) *Equity in the Classroom: towards effective pedagogy for girls and boys*. London: Falmer Press.

Harris, S., Nixon, J. & Rudduck, J. (1993). School, homework and gender. *Gender and Education*. 5, pp. 3-14.

Hey, V., Leonard, D., Daniels, H. & Smith, M. (1998). Boys' underachievement, special needs practices and questions of equity, in: D. Epstein, J. Elwood, V. Hey & J. Maw (Eds) *Failing* Boys? Issues in Gender and Achievement. Buckingham: Open University Press.

Hinds, D. (1998). Don't Be Trapped by Gender Stereotypes. *London Times Educational Supplement*, Nov. 13, 1998, Issue 4298, pp. SS8A-9A.

Hoff-Sommers, C. (1994). *Who Stole Feminism*. New York: Simon & Schuster.

Holmes, N. C. (1991). The Road Less Traveled by Girls. *School Administrator*, 48(10),16-20.

Huang, G., Taddese, N., & Walter, E., (1997). *Entry and Persistence of Women and Minorities in College Science and Engineering Education. Research and Development Report*. U.S.

Jackson, D. & Sallibury, J. (1996). *Challenging Macho Values*. London: Falmer Press.

Jacobson, A.J. (2000). *Feminist interpretations of David Hume*. University Park, Pa. : Pennsylvania State University Press.

James, P. (1999). Masculinities under Reconstruction: classroom pedagogy and cultural change. *Gender and Education*, 11(4), 395-412.

Judd, J. (1994). They're falling rapidly behind girls at school. Are boys in terminal decline? *Independent*, 18. October.

Johnson, S. (1995). *The AAP and Gender Differences Research*. Report for the Scottish Office Education Department.

Johnston, L., Bachman, J., & O'Malley, P. (1992). Monitoring the Future: Questionnaire Responses from the Nation's High School Seniors. Ann Arbor, Mich.: Survey Research Center, University of Michigan.

Keizo, N., & Edgington, D.W. (1998). *Japan and the West : the perception gap*. Aldershot, Hants, England ; Brookfield, Vt., USA : Ashgate.

Kelly, A. (1988). gender differences in teacher-pupil interactions: a meta-analytic review. *Research in Education*, 39, pp. 1-23.

Kenway, J. & Fitzclarence, L. (1997). Masculinities, violence and schooling: challenging 'poisonous pedagogies'. *Gender and Education*. 9. pp. 117-134.

Kenway, J. & Wills, S. with Blackmore, J. & Rennie, L. (1998). *Answering Back: girls, boys and feminism in schools*. London, Routledge.

Keyes, W. & Fernandez, C. (1993*). What Do Students Think about School? A report for the National Commission on Education*. Slough: National Foundation for Educational Research.

Kilby, D. (1999). Reflections on Two Decades of Research on Teen Sexual Behavior and Pregnancy. *Journal of School Health*, 69(3), 89-94.

Kilbourne, B. (1994). Effects of Individual, Occupational, and Industrial Characteristics on Earnings: Intersections of Race and Gender. *Social Forces*, 72(4),1149-76

Kingston, P. (1996). The failing sex, *Guardian Education*, 12 March.

Kipnis, A. (1999). *Angry Young Men. How parents, teachers, and counselors can help "bad boys" become good men*. San Francisco: Jossey-Bass Publishers.

Kruse, A-M. (1992). '... We have learnt not just to sit back, twiddle our thumbs and let them take over.' Single-sex settings: pedagogies for girls and boys in Danish schools. *Gender and Education*, 4, pp81-103.

Kruse, A-M (1996) Single-sex settings: pedagogies for girls and boys in Danish schools, in: P. Murphy & c. Gipps (Eds) *Equity in the Classroom: toward effective pedagogy for girls and boys*. London, Falmer Press.

Lafrance, M. (1991). School for scandal: different educational experiences for females and males. *Gender and Education*, 3, pp. 3-13.

Lange, T. (1999). *Understanding the school-to-work transition : an international perspective*. Commack, N.Y. : Nova Science Publishers.

Lewis, S., Jepson, J. & Casserly, M. (1994). *Closing the Achievement Gaps in Urban Schools: A Survey of Academic Progress and Promising Practices in the Great City Schools*. Preliminary Report. U.S. District of Columbia

Lindroos, M. (1995). The Production of 'Girl' in an Educational Setting. *Gender and Education*, 7(2), 143-156.

Lyons, N. P., Hanmer, T. J. & Gilligan, C. (1990). Making Connections: The Relational Worlds of Adolescent Girls at Emma Willard School. *Boston: Harvard University Press.*

Mac an Ghaill, M. (Ed.) (1996). Understanding Masculinities: social relations and cultural arenas. *Buckingham: Open University Press.*

Macewen, Scott, A. (1994). Gender and Social Change. *Oxford: Oxford University Press.*

Mahony, P. (1985). Schools for the Boys? Co-education Reassessed. *London: Hutchinson.*

Manthey, J. (1998). Boys and Girls Are Different! *Creating Gender-Friendly Schools*. Kid Culture in the Schools Workshop, *Petaluma, Calif.*

Mappen, E. F. (2000). Exploring Science and Engineering through Mentoring and Research: *Enriching Undergraduate Education for Women*. *AWIS Magazine*, 29(1), 10-13.

Martino, Wayne. (1995). Deconstructing Masculinity in the English Classroom: a site for reconstituting gendered subjectivity. *Gender and Education*, 7(2), 205-220.

Mather, M. A. (1999). Gender Statis Making News. *Technology and Learning*. 19(5), 59.

Merryfield, M. M. (1994). Shaping the Curriculum in Global Education: The Influence of Student Characteristics on Teacher Decision-Making. *Journal of Curriculum and Supervision*, 9(3), 233-49.

Metropolitan Life Insurance Company, The (1997). *The American Teacher 1997: Examining Gender Issues in Public Schools*. New York: Metropolitan Life Insurance Company.

Meyer, M. H. Eds. (2000). *Care work : gender, labor, and welfare states*. New York : Routledge.

Mills, M. (2000). Issues in Implementing Boys & rsquo; Program in Schools: male teachers and empowerment. *Gender and Education*, 12(2), 221-238.

Ms. Foundation for Women (1995). *Synopsis of Research on Girls*. New York: Ms. Foundation.

Mullis, I. Martin, M.O., Fierros, E.G., Goldberg, A.L., & Stemler, S. E. (2000). *Gender Differences in Achievement, IEA's Third International Mathematics and Science Study (TIMSS)*. Boston College: TIMSS International Study Center.

Murphy, P. (1991). *Assessment and gender*. Cambridge Journal of Education. 21. pp. 203-214.

Murphy, P. & Gipps, C. (Eds). (1996). *Understanding Masculinities: social relations and cultural arenas*. Buckingham: Open University Press.

Nilan, Pam. (1995). Making Up Men. *Gender and Education*, 7(2), 175-188.

Nilan, P., (2000). 'You're Hopeless I Swear to God': shifting Masculinities in classroom talk. *Gender and Education*, 12(1), 53-68.

O'Connor, C. (1999). Race, Class, and Gender in America: Narratives of Opportunity Among Low-Income African American Youths. *Sociology of Education*, 72(3), 137-157.

O'Connor, A., Tilly, C., & Bobo, L. D., Eds. (2001). *Urban inequality : evidence from four cities*. New York: Russell Sage Foundation, c2001.

Orenstein, P. (1995). *Schoolgirls: Young Women, Self-Esteem & the Confidence Gap*. Alibris: Anchor.

Parry, O. (1997). 'Schooling is fooling': why do Jamaican boys underachieve in school? *Gender and Education*, 9, pp. 223-232.

Paechter, C. (1998). The Gender Politics of Educational Changes. *British Educational Research Journal*. 24(4), 485-486.

Painter, L. T., Cook, J. W., & Silverman, P. S. (2001). The effects of therapeutic storytelling and behavioral parent training on noncompliant behavior in young boys. *Violence & Abuse Abstracts*, 7(3), 163-252.

Pattatucci, A. Eds. (1998). *Women in science : meeting career challenges*. Thousand Oaks, Calif. : Sage Publications.

Petersen, A. C., et al., (1993). Depression in Adolescence. *American Psychologist*. 48(2), 155.

Petty, G. (1989). *Teaching Today*. Cheltenham: stanley Thornes.

Pickering, J. (1997). *Raising Boys' Achievement*. Stafford: Network Educational Press.

Pipher, M. (1994). *Reviving Ophelia: Saving the Selves of Adolescent Girls*. New York: Putnam.

Preece, P. F., Skinner, N. G., & Riall, R. A. H., (1999). The Gender Gap and Discriminating Power in the National Curriculum, Key Stage Three Science Assessments in England and Wales. *International Journal of Science Education*, 21(9), 979-87.

Porter, M. & Judd, E. (2000). *Feminists doing development : a practical critique*. New York : Zed Books.

Randford, J. Ed. (1998). *Gender and choice in education and occupation*. London ; New York : Routledge.

Renold, E. (2001) Learning the 'Hard' Way: boys, hegemonic masculinity and the negotiation of learner identities in the primary school. *British Journal of Sociology of Education*, 22(3), 369-385

Ritts, V., Patterson, M. & Tubbs, S. (1992). Expectations, impressions and judgements of physically attractive students: a review. *Review of Educational Research Journal*. 62, pp. 413-426.

DeRosa, D. & Wilcox, D. L. (1989). Gaps are Narrowing between Female and Male Students. *Public Relations Review*, 15(1), 80-90.

Roulston, K. & Mills, M. (2000). Male Teachers in Feminized Teaching Areas: marching to the beat of the men's movement drums? *Oxford Review of Education*, 26(2), 221-237.

Radford, J. (1998). *Gender and choice in education and occupation*. New York : Routledge.

Raphael Reed, L. (1999). Troubling boys and disturbing discourses on masculinity and schooling: a feminist exploration of current debates and interventions concerning boys in school. Gender and Education, 11, pp. 93-110.

Riddell, S. (1992). Gender and the Politics of the Curriculum. London: Routledge.

Rogers, A. G., Gilligan, C., & Tolman, D. L. (1991). *Women, Girls, & Psychotherapy: Reframing Resistance*. Boston: Harvard University Press.

Rose, P. (1997). *Gender and primary schooling in Ethiopia*. Brighton, Sussex : Institute of Development Studies

Sadker, D. (1999). Gender Equity: Still Knocking at the Classroom Door. *Educational Leadership*, 56(7), 22-26.

Sadker, M. P. (1995). *Failing at Fairness: How American's Schools Cheat Girls*. Carmichael: Touchstone Books.

Salisbury, J. & Jackson, D. (1996). Challenging Macho Values: practical ways of working with adolescent boys. *London: Falmer Press*.

Sammons, P. (1994). Gender, Ethnic and Socio-economic Difference in Attainment and Progress. *London: Institute of Education.*

Scott, K. P. (1986). Effects of Sex-Fair Reading Materials on Pupils' Attitudes, Comprehension, and Interest. *American Educational Research Journal,* 23(1), 105-16.

Sewell, T. (1998). Loose cannons: exploding the myth of the 'black macho' lad. in: D. Epsten, J. Elwood, V. hey & J. Maw (Eds) *Failing boys? Issues in Gender and Achievement.* Buckingham: Open University Press.

Shain, F. (2000). Managing to Lead: women managers in the further education sector. *Journal of Further and Higher Education*, 24(2), 217-230.

Sharma, S. & Meigham, R. (1980). Schooling and sex roles: the case of GCE O level math. British Journal of Sociology of Education. 1, pp. 193-206.

Sharpe, S. (1976). *Just like a Girl: how girls learn to be women*. London: Penguin.

Shilling, C. (1991). Social space, gender inequalities and educational differentiation. *British Journal of Sociology of Education*. 12. pp. 23-44.

Skelton, C. (1996). Learning to be tough: fostering maleness in one primary school. *Gender and Education*, 8, pp. 185-197.

Skelton, C. (1997). Paper presented at *Leeds LEA Gender and Achievement Conference*, Elmete Center, 10 March.

Skelton, C. (1998). Feminism and Research into Masculinities and Schooling. *Gender and Education*, 10(2), 217-227.

Sollis, A. (1996). The 'Underachieving' African-Caribbean boy. *Multicultural Teaching to Combat Racism in School and Community*, 14, pp. 32-36.

Solmon, L., (1976). *Male and female graduate students : the question of equal opportunity.* New York : Praeger.

Solomon, J. & Harrison, K. (1991). Talking about science-based issues; do boys and girls differ? *British Educational Research Journal*, 17, pp. 283-294.

Sommers, C. H.(2000). *The War Against Boys—How misguided feminism is harming our young men.* New York: Simon & Schuster.

Sorensen, E., Gender and Racial Pay Gaps in the 1980s: Accounting for Different Trends. *Final Report. Researching Women in the Workplace*. U.S. District of Columbia

Stanworth, M. (1981). *Gender and Schooling*. London: Century Hutchinson.

Stanwroth, M. (1987). Girls on the margins: a study of gender divisions in the classroom, in: G. Weiner & M Arnot (Eds) *Gender under Scrutiny*. London: Hutchinson.

Stobart, G.;, White, J., Elwood, J., Hayden, M. & Mason, K. (1992). *Differential Performance in Examinations at 16+: English and Mathematics*. London: Schools Examination and Assessment Council.

Swain, J. (2000). 'The Money's Good, The Fame's Good, The Girls are Good': the role of playground football in the construction of young boys' masculinity in a junior school. *British Journal of Sociology of Education*, 21(1), 95-109.

Swann, J. (1992). *Girls, Boys, and Language*. Oxford: Blackwell.

Taber, K. (1992). Girls' interactions with teachers inmixed physics classes: results of classroom observation. *International Journal of Science Education*, 14, pp. 163-180.

Tembon, M. (1997). *Gender and primary schooling in Guinea*. Brighton : Institute of Development Studies.

Tomaskovic-Devey, D. (1993). The Gender and Race Composition of Jobs and the Male/Female, White/Black Pay Gaps. *Social Forces*, 72(1), 45-76.

Toutkoushian, R. K. (1998). Racial and Marital Status Differences in Faculty Pay. *Journal of Higher Education*, 69(5), 513-41.

Townsend, B. K. Eds., (1995). *Gender and power in the community college*. San Francisco : Jossey-Bass.

Treneman, A. (1998). Will the boys who can't read still end up as the men on top? *Independent*, 5 January.

Turner, S. E. & Bowen, W. G. (1999). Choice of Major: The Changing (Unchanging) Gender Gap. *Industrial and Labor Relations Review*, 52(2), 289-313.

United States. Congress. Senate. Committee on Health, Education, Labor, Pensions. (2000). *Gender-based wage discrimination : hearing of the Committee on Health, Education, Labor, and Pensions, United States Senate, One Hundred Sixth Congress, second session, on examining the Bureau of Labor Statistics report which provides a full picture of the gender-based wage gap, the reasons for these gaps and the impact this discrimination has on women and families, and the effectiveness of current laws and proposed legislative solutions, and S. 74, amend the Fair Labor Standards Act of 1938 to provide more effective remedies to victims of discrimination in the payment of wages on the basis of sex*, June 8, 2000. Washington : U.S. GPO : For sale by the Supt. of Docs., Congressional Sales Office, U.S. GPO

U. S. Connecticut, (2000). *What Grown-Ups Understand about Child Development: A National Benchmark Survey. Comprehensive Report*. U.S. Connecticut.

U. S. Department of Education. (1995). *The Condition of Education*. Washington, D.C.: U.S. Department of Education.

U. S. Department of Education. National Center for Education Statistics. (1998). Fall Enrollments in colleges and Universities. Washington D.C.: National Center For Education Statistics.

U. S. Ohio, (1996). The School-to-Work Opportunities Act: Equitable Education for All Students. *Equity Issues*, 2(2).

Volman, M., Van Eck, E. & Ten Dam, G, (1995). Girls in science and technology: the development of a discourse, *Gender and Education*. 7, pp.-283-291.

Ward, V. G. (1999). *Career Counseling of Girls and Women: Guidelines for Professional Practice*: ERIC Digest. U.S. North Carolina.

Walden, J. (1991). gender issues in classroom organization and management, in: C. McLaughlin, C. Londge & C. Watkins (Eds). *Gender and Pastoral Care*. Oxford: Basil Blackwell.

Warrington, M. & Younger, M. (1996) Goals, expectations and motivations: gender differences in achievement at GCSE. *Curriculum*. 17. pp. 80-93.

Warrington, M. & Younger, M. (2000). The other side of the gender gap. *Gender and Education*. 12 (4). pp. 493-508.

Warrington, M. & Younger, M. (2001). Single-sex Classes and Equal Opportunities for Girls and Boys: perspectives through time from a mixed comprehensive school in England. *Oxford Review of Education*, 27(3), 339-356.

Weiner, G., Arnot, M. & David, M. (1997). Is the future female? Female success, male disadvantage, and changing gender patterns in education, in: A. Halsey, H. Lauder, P. Brown & A. Wells (Eds). *Education: culture, economy and society*. Oxford: Oxford University Press.

Whitelaw, S., Milosevic, L., & Daniel, S. (2000). Gender, Behavior and Achievement: a preliminary study of pupil perceptions and attitudes. *Gender and Education*, 12(1) 87-113.

Whyte, J. (1985). Girl friendly science and the girl friendly school, in: J. Whyte, R. Deem, L. Kant & M. Gruickshank, (Eds). *Girl Friendly Schooling*. London: methuen.

Woodhead, C. (1996). Boys who learn to be losers. *The Times*, 6 March.

Woods, P. (1976). The myth of subject choice. *British Journal of Sociology*, 27, pp. 130-149.

Yates, :. (1997). Gender equity and the boys debate: what sort of challenge is it? *British Journal of Sociology of Education*. 18 pp. 337-347.

Younger, M. & Warrington, M. (1996). Differential achievement of girls and boys at GCSE: some observations from the perspective of one school. *British Journal of Sociology of Education*. 17, pp. 299-313.

Younger, M., Warrington, M. & Williams, J. (1999). The gender gap and classroom interactions: reality and theoretic? *British Journal of Sociology of Education*, 20, pp. 327-343.

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